CARDIFF UNIVERSITY

THE FRIDAY MOSQUE OF THE ARABIAN GULF: DEFINING ITS SPATIAL AND FORMAL LANGUAGES-1975-2010

**A THESIS SUBMITTED TO WELSH SCHOOL OF ARCHITECTURE
CARDIFF UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY**
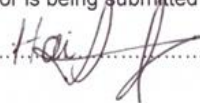
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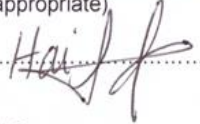**Specimen layout for Declaration/Statements page to be included in a thesis.**

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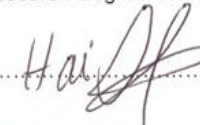
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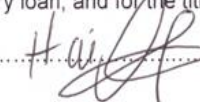
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Abstract

This thesis aims to understand the transformation process of the Friday mosque in the Arabian Gulf, in terms of its formal and spatial languages, within the period of 1975 to 2010. Essentially, the Arabian hypostyle mosque was the dominating architectural typology in the northern Gulf region until modern times. This traditional architectural language was transformed in many ways as a result of socio-political and economic factors subsequent to the discovery of oil in the region in the 1930s and 1940s.

The transformation of the traditional Friday mosque was evident after the declaration of independence of the Arabian Gulf countries in the early 1970s, which coincided with the high revenues of oil. During this period and the decades following, the architectural discourse of the Friday mosque has express modernist influence and regional Islamic influences.

This thesis provides insight into the contributing factors of these transformations and their role in shaping the contemporary Friday mosque character in the urban fabric of the Arabian Gulf cities. It investigates the vernacular and historical mosques in the region to establish the pre-existing context against which the analytical investigations of this study can be understood.

The research focuses on comparative studies of the mosques of Abdel-Wahed El-Wakil, Rasem Badran, and Mohamed Makiya in the cities of Manama, Riyadh, Kuwait, and Muscat. These architects were selected owing to the significance and influence of their distinctive architectural languages based—in each case—on strongly articulated theoretical and socio-political positions. A spectrum of research approaches supports these comparative analyses, including: interviews with El-Wakil, Badran, and other significant actors; interpretative historical research; archival research; studies of the pre-oil settlements of the urban fabric of the Arabian Gulf; site visits to the representative traditional, contemporary mosque sites; and case studies sites included in the study.

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CHAPTER ONE

INTRODUCTION AND DESCRIPTION OF THE STUDY

1.1 Problem Statement

The architectural design of Friday mosques in the Arabian Gulf follow the Arabian mosque hypostyle. This style was first found in the Prophet's house in Madinah, and has dominated the architectural typology of the northern Gulf region until modern times. However, Friday mosque architecture has transformed over time, as a result of many contributing factors.

This research covers the post-oil period that began in the 1950s, with a focus on 1975-2010, as well as the pre-oil period from the 1900s to the 1950s, in order to provide the backdrop against which an analytical review of the mosque language can be performed. It was only in the 1970s, when oil revenues reached their peak, that the Arabian Gulf States experienced a remarkable transformation that changed their built environment beyond recognition. During this period, in 1971, Bahrain, the United Arab Emirates and Qatar announced their political independence (Kuwait had declared its independence in 1961, and Saudi Arabia had formed its modern kingdom in 1932). These economic and political factors are among many forces that shaped the architectural and cultural milieus of the Gulf region in the post-oil period that had a significant impact on the spatial and formal languages of the Friday mosque.

The Friday mosque architecture of the Arabian Gulf went through a phase of transformation, in which it was refined and altered, and through this process it produced a hybrid architectural style inspired by various regional Islamic cultures. The resulting architectural language

incorporated Persian, Ottoman, Mamluks, and Moroccan styles, to name only a few of the Islamic regional trends.

This research focuses on the process of transformation of the Friday mosque architecture and its spatial and formal languages by analytically investigating a select number of case studies and sub-case studies of Friday mosques in the cities of Muharraq, Riyadh, Kuwait, Manama and Doha. This study is limited in its coverage to the western coastal areas of the Arabian Gulf, as they share common characteristics, with similar environmental, geographical and cultural backgrounds, which allows for a reasonable comparative approach of the mosque architectural development during the study period. Other cities, outside of the geographical focus of the study were added to enhance the backdrop against which the architectural language can be identified.

1.2 Research aims

This research aims to understand the transformation process of the spatial and formal languages of the Friday mosque in the Arabian Gulf during the period of 1975-2010, and to define these languages in their varied geographical, socio-political, and cultural contexts, focusing on the eastern side of the Arabian Peninsula and the cities of Riyadh, Doha, Kuwait, Muharraq, and Manama. Riyadh, the capital city of the Kingdom of Saudi Arabia, was added as it hosts the kingdom's State Mosque, known as 'Qasr Al-Hkoum'; this mosque forms one of the selected case studies covered in Chapter 7, where the works of the architect Rasem Badran, are analysed.

Although Muscat, the Capital of the Sultanate of Oman, which is located in the southern part of the Gulf region, lies outside the geographical coverage area of the study, it is also included as it hosts the State Mosque of the Sultanate of Oman, known as 'the Grand Mosque of Oman', designed by the architect Makiya, whose work is covered in Chapter 8. This enables in building a deeper understanding of Makiya's architectural language, by comparing his design of the

Grand Mosque of Oman to that of the Kuwait State mosque built in 1977. Jeddah, which lies outside the geographical focus of the study, on the western coast of the Kingdom of Saudi Arabia, overlooking the Red Sea, was added as it hosts a number of the works of architect El-Wakil, one of the main influencers in mosque design in the region.

To build the geopolitical context in which the built environment exists, the study also aims to define 'Arabian Gulf' in the context of the thesis research and – as further context – to identify the characteristics and typologies of the historical mosque of the 'pre-oil period,' tracking its transformation during the study period and looking at the extent to which its indigenous typologies have contributed to the contemporary spaces and forms of the mosque complex.

In addition, the study aims to identify the key actors who influenced the architectural language of the mosque in the Arabian Gulf countries and their main contributions in terms of introduction of new design language or building methods, and how they influenced the evolution of mosque design in terms of spatial and formal languages.

Therefore, the role of the three main architects – Abdel Wahed El-Wakil, Rasem Badran and Mohamed Makiya – in forming new architectural and spatial languages for the Friday mosque will be examined through the analytical framework of their mosque projects in the region.

1.3 Research questions

Several questions are central to the examination of the Friday mosque transformation process, and will assist in answering the following main research question: How can the spatial and formal languages of the Friday mosque of the Arabian Gulf for the period of 1975-2010 be identified?

To provide a context for the period of study, we will ask: What are the characteristics and typologies of the historic mosque of the Arabian Gulf in the pre-oil period (1900s–1950s)? Next, we will explore which key socio-political factors have played a significant role in the

formation of the spatial and formal languages of the Friday mosque. The research will also aim to explore attempts to achieve a balance between reflecting past heritage and incorporating contemporary elements of mosque design, as well as the extent to which modern and regional expressions have been synthesised without losing local cultural identity. Finally, the research will investigate the contribution and influence of key architects and thinkers in the formation of these spatial and formal languages.

1.4 Research objectives described by chapter

The thesis consists of Nine chapters. A brief summary of each chapter (and its objectives) is outlined below.

1.4.1 Chapter One, Two and Three

These chapters develop the direction for the study, presenting the research questions, aims, scope, and methodologies, as well as a review of the current literature on mosque development in the Arabian Gulf and mosque architecture to address the current state of knowledge in the field.

Chapter two, discusses the analytical tools used in the study, limitation, and describe the case studies. The framework of the thesis is formulated and the gaps in the relevant field of study that need to be addressed are identified.

1.4.2 Chapter Four: The Arabian Gulf: Defining the characteristics and typologies of the historic Friday mosque.

The Four chapter investigates the characteristics and typologies of the traditional Friday mosque prior to the 1970s in the Arabian Gulf. To provide further context, the chapter includes two examples of case-study analysis applied to two models of Friday mosques: the Seyadi Mosque in Muharraq, Bahrain, built in 1900, and the Al Qubib Mosque in Doha, Qatar, built in 1913. The objective is to provide a picture of the vernacular Friday mosque and the quarter

Friday mosque's traditional characteristics in a period when the traditional urbanism of the Gulf cities was still intact. Prior to the 'modernisation era', this era will be referred to as the pre-oil period.

1.4.3   Chapter Five: the post-oil Friday State Mosque: Critical regionalism

Chapter Five investigates the transformation of the Friday mosque's spatial and formal languages and how its architecture shifted from the traditional quarter Friday mosque into a larger-scale State Mosque representing the new socio-political state of the Gulf cities. The Mohammed bin Abdul Wahhab State Mosque in Doha, built in 2006, will be discussed as a case study. This chapter looks at this transitional phase of the Friday mosque's spatial and formal urban and architectural languages in the context of its socio-cultural implications.

1.4.4   Chapters Six, Seven and Eight (the core of the research): The analytical frameworks of the three architects of the selected mosques (case studies)

The main objective of these chapters is to identify and interpret the critical regionalist positions these architects adopted in evolving the spatial and formal languages in response to the dynamics of the varied cultural contexts.

The case study analyses will be supported by interviews with architects, architectural drawings, photographs, unstructured interviews with the users of the mosques, and observations.

In Chapter Seven, the Qasr Al-Hkoum Mosque (the state mosque of Saudi Arabia), and in Chapter Eight, the Kuwait State Mosque, are selected due to the national and cultural significance associated with state mosques. While Yateem Mosque, discussed in Chapter Six, is not a state mosque of Bahrain, it was selected because it represents a translation of the traditional-contemporary language that El-Wakil is adopting. Also, the Yateem Mosque is the first mosques that El-Wakil designed outside of Saudi Arabia, which is home to most of his mosque projects.

1.4.5   Chapter Nine: Discussion and conclusion

The final chapter presents a comparative analysis of the mosques of El-Wakil, Badran and Makiya, looking at the different approaches followed by the three architects for their design of the mosques described in the previous chapters. The objectives of this chapter are to compare the three architects' architectural and spatial languages by looking at how they responded to the local architecture and culture as well as the distinctive approaches and methodologies used in their designs. The chapter also briefly explores the new trends in mosque architecture, discusses the major findings of the study, and presents future recommendations for studies that could complement this research and fill the gap that currently exists in the literature regarding this subject matter.

CHAPTER TWO

RESEARCH METHODOLOGY

2.1 Introduction

This chapter explains the methodological approach carried out in the research. It aims to introduce the analytical framework of examinations, which set out to understand the Friday mosque transformation process in respect to its formal and spatial idioms. It will introduce the framework and justifies the qualitative approach selected and reviews their applications. It will also explain the different methods used in the data-collecting process and provide an overview of the tools assisting in the inquiries that allowed detailed analysis of the data.

First, this chapter will provide a description of the research strategy by outlining the main principles the study has adopted, which have resulted from the literature review. It will discuss the limitations and scope of the field work and concludes with general considerations addressed to the reader, to be taken into consideration.

2.2 Research strategy

By reviewing the literature in the next chapter, it became clear that the modern history of architecture in the Arabian Gulf region can be classified by two chronological phases; first, the pre-oil phase which falls between the 1900s to the 1930s, while the second phase is marked by the economic development which peaked during the mid-seventies of the last century and lasted for many decades onwards.

The study is divided into two parts; the first was to explore the historical and traditional key Friday mosques in the Gulf region within the pre-oil phase, which aided to set out a conceptual

context to the topic, while the second part was a detailed analysis of case studies defined by specific inquiries. The following will explain further the frameworks of the thesis.

To define the formal and spatial languages of the Friday mosque, the study should be conducted based on two principles:

First, that the examination of changing architectural and spatial languages of the Friday mosque will be best possible by understanding the historical characteristics and typologies of the Friday mosque in the Gulf. **Second,** that the investigation of the Arabian Gulf Friday mosque 's formal and spatial language, will be best possible through examining the work of the three architects (form-givers); El-Wakil, Badran and Makiya in the cities of the northern Gulf region. These two main principles have led the study to form the analytical framework and approaches as explained below:

1- The need to trace the historical precedents of the Friday mosque makes it important to identify the traditional elements of the mosque's main components; minaret, dome and mihrab with detailed analysis of its architectural forms, meanings and spatial arrangements, covering the architectural variations which existed in the old mosques of the study areas.

2- The second approach will be in the context of the socio-political implications that form the mosque's spatial identity, by delineating the contributing factors that shaped the traditional mosques in the past and led to the creation of different typologies throughout the Gulf region.

3- The emergence of the state mosque in the 1970s to the mid-1980s, which represents the national identity, necessitated the study of its formal and spatial languages due to its socio-political importance, as it located in the capital city of the country. The state mosque's cultural and urban contexts are evaluated, through detailed study of the

selected state mosques and the theoretical framework of the architects behind the state mosque's design.

The next step is to find the appropriate methods to analyse the transformation of the formal and spatial languages of the Friday mosque in the Gulf, and to evaluate the regional position of the three architects, through their mosque projects in the region. The main methodological questions that followed the research strategy were:

1- What is the best way of studying the traditional Friday mosque in the pre-oil period?

2- What is the best way of analysing the formal and spatial languages of the Friday mosque during the post-oil period?

To answer the first question, it was necessary to identify the key Friday mosques in the Arabian Gulf that were built during this period. The next step was to study these mosques in detail, concentrating on the two models of mosques located in Bahrain and Qatar. The study focused on the architectural components, spatial layout and construction materials. The research techniques were direct observation (when possible, as in the Seyadi mosque in Muharraq) and reviewing of historical documents, and literature, in addition to interviews with experts. As a result, a detailed picture of the traditional Friday mosque in the Gulf was developed and typologies were drawn by the researcher to delineate the mosque architectural forms and features in each city of the study.   The results of this research are shown in Chapter Four.

To answer the second question, the researcher considered the state mosques as an appropriate representation of how the mosque's formal and spatial languages have shifted, and since it was designed by prominent Figures in the contemporary mosque architecture, as in the case of Qasr Al-Hkoum mosque of Riyadh and Kuwait state mosque, designed by Badran and Makiya, respectively. In addition, El-Wakil's Yateem mosque in Bahrain and four of his mosques in Saudi Arabia were also considered. It was necessary to investigate each of the three architects' critical regional position, supplemented by their previous mosque projects and approaches, to

build a comparative narrative to their mosque's design in the selected city of the study. The selected state mosques are the main case studies and will be explained further in the chapter.

2.3 Research methods

In this research, mixed qualitative methods were used appropriate to the interpretative nature of the subject of the study and the collected data available. The research aimed to utilise the different types of data extracted from several sources. This required the researcher to adopt three main methodological strategies; an interpretative-historical approach, case studies, and formal and unformal interviews; with stake holders, governmental authorities, academics and mosque users. These strategies were supplemented by archival records research, data gathering from the literature and content analysis. Each strategy will be explained further below.

2.3.1 Interpretative-historical approach

Groat and Wang (2002, p. 136) defined interpretative research specifically as 'investigations into social-physical phenomena within complex contexts, with a view toward explaining those phenomena in narrative form and in a holistic fashion'. To build a narrative on the historical mosques in the northern region of the Gulf, required the researcher to adopt an interpretive-historical method combined with an exploratory inquiry. To that end 'both strategies seek to describe or explain socio/physical phenomena within complex contexts, and both seek to consider the relevant phenomena in a holistic manner' (ibid, p. 179-180).

While the establishment of this inquiry grounds the formation of the second part of the thesis in which case studies were analysed, it was also adopted throughout the research. It provided an insight into the historical architectural characteristics and typologies of the Arabian Gulf traditional Friday mosque and its variation through different cities of the region. It also revealed the fact that relatively few studies on the topic have been conducted on the covered areas of

the study. Hence, using both inquiries was required as a method of investigation to provide initial discoveries and preliminary data.

The interpretive-historical approach requires searching and organising data gathered from archival records, literature, fieldwork and interviews. The evaluation of the data was categorised based on its relevance to a specific inquiry.

2.3.2 Case studies: rationalisation of the selection process

'Qualitative research is conducted through an intense and/or prolonged contact with a "field" or life situation. Hence, the emphasis in many studies on "fieldwork" (Miles and Huberman, 1994, p. 6). The analytical framework of this research is case-based. Friday mosques in the cities of Muharraq, Riyadh, Kuwait, Manama and Doha were selected based on two parameters: a) their socio-political position, as they are State Mosques and are thus supposed to reflect the national cultural and religious identity; b) their representation of distinctive architectural languages. Examination of the varied languages of mosque architecture between cities, the aim was to provide a deep understanding of the architectural transformation that occurred during the post-oil era and how the key architects contributed in shaping the spatial and formal language of the state mosque.

The case studies are categorised into two sets of groups: main and sub-case studies. Furthermore, selected historical mosques were added in chapters 5, 6, 7 and 8, to provide a picture of the local traditional mosque architecture, which supplement the analytical framework of the research. The selection of the main case studies was based on chronological order, as shown in Table 2.1.

Chapter	Historical background	Sub-case study	Main case study
Chapter Four	Seyadi mosque, in Bahrain. Al Qubib mosque, in Qatar.		
Chapter Five			Mohammed bin Abdul Wahhab State Mosque. (Doha, Qatar-2011)
Chapter Six		. The Corniche mosque . The Island mosque . The Binladen mosque . The Ruwais mosque. (located in Jeddah, Saudi Arabia)	Yateem mosque. (Manama, Bahrain-1992)
Chapter Seven	Historical mosque of Qasr Al-Hkoum district.	. State Mosque of Baghdad . Ali bin Abi Talib mosque, in Doha . King Abdul Aziz mosque in Kharj, Saudi Arabia	Qasr Al-Hkoum mosque in Riyadh. (Riyadh- 1992)

Chapter Eight	.Al Khalifa mosque in Kuwait. . The Great Mosque at Bilad Bani Bu Ali. . The fort at Bilad Bani Bu Ali. . The Great Mosque at Manah. The Great Mosque at Bahla.	. Khulafa Mosque in Baghdad.	. Kuwait State mosque. (Kuwait City, Kuwait 1985). . Sultan Qaboos Grand Mosque (Muscat, Oman-2001).

Table 2.1: The complete list of case studies with their location and date of construction completion.

According to the research strategy, the area selection process started by identifying the cities which represent evident transformation in the mosque architecture, during the pre-oil and post-oil periods, but since they are all coastal cities, there was a need for selecting case studies from the neighbour areas, to develop more comparisons with different environmental and regional settings.

In choosing a select sample of mosques from the region of coverage, the aim is to develop the groundwork of which to compare the evolvement of the formal and spatial language of the Friday Mosque.

The mosque sample criteria used in selecting case studies is purposive sampling based upon the following main parameters:

a) **Geographic Location:**

The Northern Gulf region is the area of the study, and includes the countries of Kuwait, Bahrain and Qatar. These countries share a resemblance in their political and cultural aspects, but differ in terms of the rate of architectural development and regional influences. Riyadh and Muscat, the capitals of Saudi Arabia and Sultanate of Oman, respectively, were added as they host the State Mosques of each of those countries.

Makiya, who designed the Kuwait state mosque in 1977, also designed the Sultan Qaboos Grand mosque in Oman in 2001, and it was necessary to include Makiya's mosque in Oman into the study, to develop more understanding of the architect's formal architectural language and to compare his different approaches and design principles applied into the two mosques.

b) **Religious Ideology:**

Islam is the state religion in the Gulf region countries, wherein the majority of their population is Sunni. The predominance of Sunni mosques both of historical significance or as state Mosques, necessitate the focus of the study on Sunni mosques. It was an early decision made by the researcher to limit the study to Sunnis mosques only, and to exclude the Shi'a mosque. The Shi'a religious architecture is different in terms of their classifications, and architectural characteristics; therefore, an accurate comparative study cannot be made between the Sunni and Shi'a's mosque due to the different criteria applied in both of them.

c) Socio-political value:

As mentioned earlier in the chapter, State mosques are the main case studies, and they were selected as they reflect a socio-political value; in Kuwait, the state mosque is built in the capital city, at a close distance to the Amir's palace, while in Riyadh the state mosque is built on the old site of the historical mosque of Qasr Al-Hkoum district, connected to the governor's palace, by its spatial design (open and semi-opened squares or midans) and physically, through bridges.

d) Architect's influence:

Three main architects were chosen to include their works in the region, due to their significant influence on the built environment, especially mosques in the Arabian Gulf region, during the study period. El-Wakil's mosques in Jeddah were added, even though they are outside of the study geographical coverage due to their architectural significance. El-Wakil has never designed a state mosque in the Gulf region, but his Yateem mosque in Bahrain, could be considered as one of his important examples of his work outside the borders of Saudi Arabia, in which the majority of his mosque projects are located. The aim of selecting the El-Wakil mosque in Jeddah, which he built during the 1980s, was to build a comparative analysis of his design and to develop an understanding of his architectural language.

2.3.3 Collection of data

The qualitative method allows data to be categorised into patterns. Common patterns or themes may reveal the importance of a specific factor on influencing the study subject, in this case the form and function of a mosque (Creswell, 1996). Using the case studies (selected mosques), data was compiled to compare the findings against other formal and spatial functions of mosques found in another region. This analysis was useful to determine the main influences in the Friday Mosque Architectural developments such as; history, ideology, funding, geographic location, urban context, construction material, buildings techniques, and government constraints over the design and regulations.

The process of data collection provided several useful findings. First, it provided a better way of measuring and understanding the process of the changing architectural and spatial languages of the Arabian Gulf Friday mosque. Secondly, it enabled a better analysis and evaluation of the three architect's approaches.

2.3.4 Interview arrangements

Silverman (1993), De Vaus (1996) and Nachmais (1976) discussed a diverse range of data collection processes, and suggest that interviews, involving high quality responses from certain individuals, can provide a valuable source of information and ideas that can supplement facts about the topic of the study.

The researcher organised the interviews based on three categories, each category was planned in accordance to specific data required. The three categories are as follows:

a) ***The first category was interviews with the key architects, who designed the state mosques selected in the study***. In Amman, Jordan, the researcher met Badran in February 2012 and the interview lasted for more than four hours. Badran was cooperative and provided the researcher with a digital copy containing the architectural drawings, sketches and photographs of all his work in the Gulf region. He also made a presentation of his work during the interview, using his laptop. Before the interview ended, Badran and the researcher visited the site of the Abu Gazalh mosque, which is one of Badran's mosques in Amman city.

The researcher had structured several questions to prepare for Badran's interview, the focus was to understand Badran's design strategies in his Riyadh mosque, and to develop more knowledge in his approaches and philosophy. Also, his mosque projects in Qatar were discussed. Questions included: How did he respond to the urban context of the Qasr Al-Hkoum mosque? Which mosque components are emphasised in his design? How does he reinterpret

the Najdi traditional architecture through the mosque's spatial and architectural design? Why has his mosque in Qatar never been built? These are only a few examples of the questions asked by the researcher during the interview. However, many other questions were generated throughout the discussion with Badran. It can be said that the architect has provided significant and valuable in-depth data to the study.

In Doha, Qatar, the researcher met El-Wakil in March 2012 for conducting the interview, and the interview questions were designed based on specific inquiries abstracted from the literature and fieldwork; the architect design methodology in mosques, his mosque projects in Jeddah, and his Yateem mosque in Bahrain. However, El-Wakil did not respond to all the questions, and was reserved in most of his answers. While, in fact, the research is dependant principally on the interviews as a primary source of data, which led the researcher to utilise El-Wakil's available interviews published in journals and media, supplemented with data gathered from literature on his work. The Yateem mosque architectural drawings were not given by him, and it was then that the researcher had to investigate which local Bahraini architectural firm could provide the necessary architectural documents of Yateem mosque, and to obtain more required information.

It was not possible to meet Makiya, regardless of many attempts made to meet him during the year of 2010. His health situation did not permit him to conduct any interviews. Therefore, arrangements to interview architects who worked with Makiya in the Kuwait state mosque and Grand mosque of Oman were planned, and preparations for structuring the interviews individually were designed as follows:

- Interview with Kanan Makiya, via skype was conducted on 2016. Emails as a way of contacting him were also used as the inquiry developed. Kanan worked with the architect's team who designed the Kuwait state mosque in the 1970s. Further,

interviewing Kanan came with more advantages, as he was a suitable source of information about his father Makiya, who he wrote a book about his works and could provide specific data required. These inquiries ranged from his father's personal view on the mosque, architecturally and as a social object, and the design principles he employs in the design, and how he developed them further in his mosque projects. There were also many other questions which emerged during the discussion.

- Interview with Godfrey Heaps, the design architect for the Grand mosque of Oman, was conducted via emails, and questions included: What had inspired Makiya for his design? Which part of the mosque has reflected Makiya's design principles? Why were the two main riwaq designed in a parallel fashion on the edge of the site? These are only a few examples of the inquiries asked by the researcher.

One valuable line of inquiry involved questions posed to Badran and El-Wakil during the interview: What is the best way to describe their mosque project? In which words can they label the formal language of each mosque they design included in the study, and how can they evaluate their design in terms of 'Identity'? Another set of questions explores whether the meaning of the traditional mosque had changed in respect to its social and cultural aspects? Also, how have their designs responded? And what are the changing factors in their opinion?

b) Government authorities: Interviews were conducted to build an understanding of the approach followed by government authorities, as they are the regulators of the built environment and play an important role in dictating the allowable design elements; this covered municipalities, urban planning ministries, religious affairs commissions, and culture ministries.

Some examples of questions prepared for this group of interviewees were: Of what are the main codes and regulations concerning the design of a mosque, and how, or did the architects

comply with them? Are there any constraints on the mosque stylistic design? This group of interviews were conducted with two governmental authorities as follows:

- Dr. Abdullah Al-Sulaiti, Director of Archaeology & Heritage Directorate, in the Ministry of Culture, Kingdom of Bahrain.

- Shaikh Hamad bin Mohammed Al Khalifa, Assistant Undersecretary for the General Directorate of Urban Planning at Ministry of Municipalities Affairs and Urban Planning.

c) Academics, authors and experts on Arabian Gulf architecture and the built environment: this was undertaken in order to develop a broader understanding of the views and perceptions held by different experts on the subject.

For this interview group, the researcher had to travel to Dubai and Al-Ain city in the United Arab Emirates, and Doha in Qatar in 2012. The interviews were conducted as follows:

- In Dubai, an interview with Kevin Mitchell, Associate Professor at the Department of Architecture at the American University of Sharjah.

- In Al-Ain city, an interview with Yasser Elsheshtawy, Associate Professor at the Department of Architecture of the UAE University.

- In Doha, Dr. Yasser Mahgoub, the Chairman of the Department of Architecture and Urban Planning, College of Engineering, Qatar University.

All interviews were semi-structured and recorded at the interviewees' consent. Therefore, a series of direct questions were used in interviews regarding opinions.

2.4 Field work constraints

Political events of 2011 and the years that followed caused delay in the progress of the fieldwork, and site visits required for the completion of the study. Furthermore, due to the regulatory limitation imposed on women's access to most of the Qasr Al-Hkoum site, the

researcher was unable to access those sites; therefore, it was required to commission a photographer to undertake the site visit and to provide photographic evidence.

2.5 General considerations

The research has its own limitations. Whereas the availability of data collected and fieldwork were the two factors which controlled the overall work, it was not possible to balance the weight of chapters 6, 7 and 8 since most of the data collected was derived from the interviews and site visits. While the analysis criteria are applied in the same manner, the case studies are varying in their scale, and in their critical representations of urban settings; for example, Badran's mosque in Riyadh offers more scope of analysis, supported by his generosity of providing required data, in contrast to El-Wakil for the reasons explained earlier in the chapter. In Kuwait, the state mosque was under restoration during the fieldwork stage of the thesis, and access to the mosque was not permitted.

2.6 Summary and conclusion

This chapter introduced the methodological frameworks and explained the research strategy and the mixed qualitative methods employed. It also provided justification of the selection process of the case studies.

A brief discussion on the interviews and how the correspondents were categorised according to each group's role was described. Two examples of the interviews' transcript, conducted with Godfrey Heaps and Kanan, are included in the appendix, for the reader to review more the narrated discussion.

CHAPTER THREE

UNDERSTANDING THE FORMAL AND SPATIAL

LANGUGES OF THE ARABIAN GULF FRIDAY MOSQUE

3.1 Introduction

This chapter aims to develop a conceptual framework for the research. As explained in the previous chapters, the research attempts to understand the transformations which occurred on the formal and spatial languages of the Arabian Gulf Friday mosque, covering the period of 1975 to 2010. To do so, it is crucial to review the literature in order to provide relevant knowledge regarding the essential aspects that have been associated with the concept of formal architecture and spatial languages of the mosque.

This chapter commences with a brief description of the Arabian Gulf geographical settings, and then discuss briefly the historical development of the Gulf cities under the study, in order to identify the main events that contributed to the shaping and evolution of modern urbanisation and the Friday mosque. The brief historical review shows that throughout history, the buildings and the urban form of the Gulf region have changed steadily, and perhaps more so beginning from the mid-1950s, when more considerable changes were noticed. Although oil wealth has played a major role in changing the architectural landscape of the region, it should be acknowledged that the modern Arabian Gulf cities architectural identity has been influenced by forces of Islamic culture, architectural movements and many other forces.

The chapter will then discuss the theoretical aspects of formal and spatial languages, and different approaches in its interpretations. It discusses the notions of traditionalism,

modernism, contemporary and regionalism. The main objectives of this chapter are: a) to define the Arabian Gulf in geographical and historical terms, in order to demonstrate the research context; b) to identify possible theoretical frameworks for the research.

3.2 The Arabian Gulf: Location and the naming

The Gulf Arab region is the area made up of the Arabian Peninsula, which is located in the southwestern region of the Asian continent, and made up of six Arab countries. The countries of the Arabian Gulf later created a regional organisation called the Gulf Cooperation Council (GCC) in 1981, which consist of: The Kingdom of Saudi Arabia, Kuwait, Bahrain, Sultanate of Oman, Qatar and United Arab of Emirates.

These countries are mainly located on the west cost of the Arabian Gulf, with only Saudi Arabia having borders with the Red Sea on the west, and the Arabian Gulf on the east, representing the largest Arab country in Western Asia by land area. Saudi Arabia also occupies the bulk of the Arabian Peninsula. The major regions in Saudi are: *Najd* – the central Arabian heartland; *Hejaz* – the western coast of the country along the Red Sea, containing the holy cities of Mecca and Medina; and *Asir* – the southwestern portion of the country on the border with Yemen (Figure 3.1).

The naming of the Gulf has been a controversial subject and an area of debate for many historians and scholars. While it is known as the Persian Gulf, others have referred to it as the Arabian Gulf. In a paper published by the Bahrain Centre for Research and Studies, Dr. Bashir Zain El-Abdin (2016, p.3) stated that:

> The Gulf is a strip of water from the Arabian Sea that stretches from the Gulf of Oman in the south to Shatt Al Arab in the north. It is 965 kilometers long, from the Strait of Hormuz Mosul to the Gulf of Oman. The Gulf has an area of about 233,000 square kilometers and has a width that varies between a maximum of 370 km and a minimum of 55 km in the Strait of Hormuz, ... The Gulf had been given

several names throughout the ages. The Assyrians, Babylonians and Chaldeans referred to it as the "South Sea" or "Lower Sea," in juxtaposition with the "Upper Sea", the Mediterranean Sea.
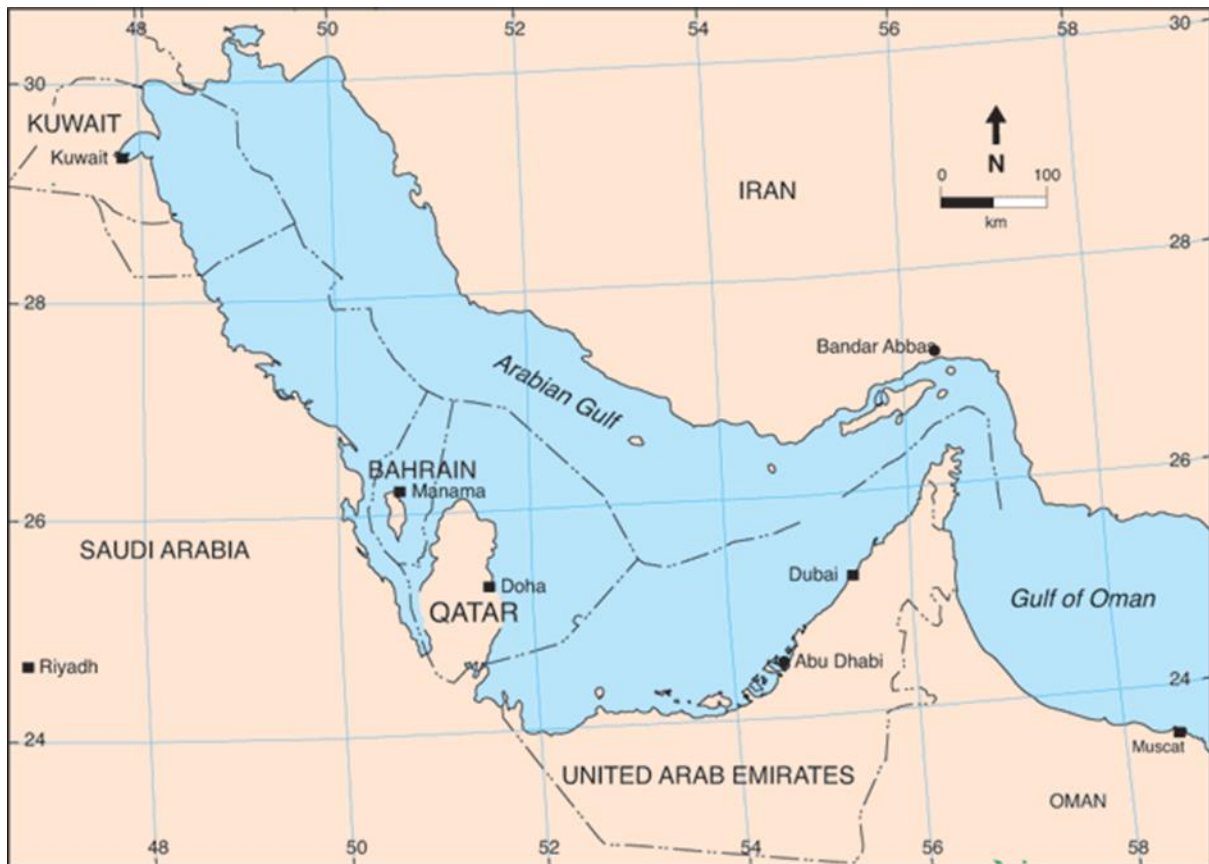
Figure 3.1: Map of the Arabian Gulf countries at the western coast of the Gulf. Source: (Rehren. T, 2011, p. 2).

Several geographers and historians in antiquity used the term 'Arabian Gulf' based on the dominance of the Arabs on the ports and islands of the body of water. Also, in the book edited by Sheikh Sultan bin Muhammed Al-Qasimi (1996), titled: *The Gulf in Historical Maps 1493-1931,* different maps of Portuguese, French, British and Dutch maps show that different names were commonly used by the different groups. Some of the names included: 'Qatif Sea', 'Sea of Basra', 'Gulf of Oman', and 'Arabian Gulf' (Figure 3.2). Therefore, since different names are used for the same location, and used interchangeably by many entities, I would use the name 'Arabian Gulf' in line with the name used by the GCC. References in the study to either the Arabian Gulf, or Persian Gulf (as used in some of the relevant sources), refers to the same location identified above.

Figure 3.2: An early map of Arabian Gulf. Source: (Al-Qasimi, 1996. p 41).

As the scope of the research covers only the countries overlooking the upper northern part of the west coast of the Arabian Gulf, the reference shall mean the coastal cities of the northern Gulf, Kuwait City, Manama, Muharraq, and Doha. Hence, the cities under study are all coastal cities. In this regard, the researcher used the term 'Arabian Gulf' rather than 'Arabian Peninsula', even though Riyadh and Muscat are both included in the study. However, it is coincided within an institutional regional identity known as the 'Arabian Gulf countries', and the nations of the Arabian Peninsula, as defined as: Kingdom of Saudi Arabia, Kuwait, and United Arab Emirates, Qatar and Sultanate of Oman.

3.3 Historical background of the Arabian Gulf: The Rise of Islam and Colonisation in the Middle East

With the emergence of Islam as a new religion in the seventh century, there were subsequent Islamic empires in the region including: the Umayyad, with its capital in Damascus; Abbasids, with its capital in Bagdad, which ended in the 11th century; and several other dynasties as well as regional powers (with the most prominent being Al-Andalus, and the Ottoman Empire). Although the Arabian Peninsula was the heart of Islam, historically, Kaaba did not hold a major political power base in its own territories until the collapse of the Ottoman Empire during 1918-1920, and the end of Western colonisation in the Gulf region, in the early 1970s.

Many countries in the Middle East and North Africa have experienced different forms of Western colonisation, which started in the second half of the 19th century, when the Ottoman Empire was dissolved after World War I. This marked a significant historical shift and started the long string of western colonisation in the Middle East. In this regard, Iraq, Transjordan and Palestine became British mandated territories, while Syria and Lebanon became French protectorates. The costal countries of the Arabian Gulf, on the other hand, were mostly under the control of British administration.

3.3.1 The presence of the Ottoman and British empires in the Arabian Gulf

In his book '*World and its peoples'* (2007, p. 29-30), Marshall Cavendish mentioned that:

> For a century, the British and the ottomans contested the region. In 1839, the British established their own colony in the Arabian Peninsula. Elsewhere, Great Britain signed agreements with the hereditary rulers of small emirates along the Persian Gulf and southern Arabian coastlines to secure safe passage for shipping, to stop piracy and slave ships, and to prevent maritime warfare. The treaty system began in the 1820s, and by the end of the century, the British had effective control of the Gulf states including their foreign policies… Direct Ottoman rule was restored in 1871, and Al-Ahsa (a region that historically known as 'Al-Bahrayn' which includes the eastern coast of the Arabian Peninsula down to the borders of Oman, and also includes the island of Awal 'known today as Bahrain', was placed first under Baghdad

Vilayet and with Baghdad's subdivision Basra Vilayet in 1875. In 1913, Ibn Saud, the founder of modern

Saudi Arabia, annexed Al-Ahsa and Qatif into his domain of Najd.

Centuries of successive tribal wars and conquests in the Arabian Peninsula eventually led to the creation of the modern nation state of Saudi Arabia in 1932. In 1897, Kuwait obtained British protection against the Ottoman Empire, which would expand their hold over the Gulf region. However, in 1961, Kuwait became the first state to declare independence in the Arabian Gulf, after ending the British protectorate.

Bahrain had been a centre of British administration in the Gulf region since 1913, for its significant strategic location in the Arabian Gulf, which affords an easy access to other markets. However, after World War II, the British sought to leave the Gulf. Accordingly, they signed a new treaty of friendship with Bahrain, where the latter declared independence in 1971, followed by Qatar, Oman, and the states that merged to form the United Arab Emirates in the same year.

3.3.2 Brief Socio-economic background

In order to explore the variations of the socio-political organisations of the Arab Gulf states, and its relation to the mosque's role and its architecture, it is crucial to identify two main periods that marked the history of the Arabian Gulf – the pre-oil discovery and the post-oil era. Mohamed Althani (2012, p.2), described the situation in the Gulf before the 1970s in the following manner:

> Arabian society was largely untouched by modernisation before 1970s, relying on traditional forms of social organisation, … the Gulf oil industry started in 1940s, but it was not until the 1970s that it began on generate revenues that could be distributed among the states' inhabitants…with the rise in oil revenues, governments spending increased rapidly. There was investment in infrastructure projects such as roads, hospitals and schools.

Before oil, Kuwait and Bahrain, and the other coastal cities along the coastline were reliant on fishery, and trading. Bahrain, which was a major trading port, particularly had a thriving pearl

fishing alongside Kuwait. But this declined with the advent of Japanese artificial pearls. The discovery of oil in Bahrain in the 1930s came just at the right time to compensate for the loss of this revenue source. Although oil was also discovered in Kuwait during the late 1930s, production was delayed until the end of World War II. Nonetheless, it was only in the 1970s that modernisation of the Gulf states became more evident.

The sudden wealth allowed the rulers to inject funds into modernising their states and building social-welfare. Health and education and better living conditions were the target of many of the states, with some witnessing the progress before others, given that some of the rulers were opposed to modernity at that time. But, as a new generation of rulers took over, more changes could be seen in the timeline of urbanisation and state modernisation.

The new urban cities required new roads to be paved, waterlines and electrical cables, new water desalination plants and electric substation. These led to the demolishing of many of the old dwellings and the implementation of new master urban plans, mostly undertaken by foreign western architectural firms. This was done without much regard to the way of living and how society existed at that time – the focus was rather on how the city would look and not on how people will live in it. With this development also came the regulations; building and design regulations, which operationalised standards and codes issued by governmental authorities, mostly led to a more homogenous mix of urban components.

This general background can help in developing an understanding of the transformation of the built environment and how this applied to mosques. The following section will further explore the evolution of modern urbanisation and the main events that shaped the new urban environments in the Gulf.

3.4 Modern urbanisation: The contributing events and their implications

A number of events played differing roles in shaping the modernisation of the urban scene in the Gulf cities, including: socio-political, socio-economic events and the influence of the architectural trends and movements, as explained below:

a) ***With Independence in the 1970s, and with the aim of asserting their national identity***, the developing Gulf countries adopted the modernism movement approach towards the architecture landscape of their rural environments. This modernism discourse mainly focused on city urban planning and public buildings such as courthouses, royal courts, Airports, Parliaments, Mosques or building of a civic nature.

With the heavy influence of the internationalist movement, governments in the Gulf region constructed development plans in which, among other things, western architects were invited to design national buildings and modern urban cities plans. This was primarily witnessed in Saudi Arabia. For example, in 1972 Constantine Doxiadis' designed the Riyadh master plans, and in 1974 George Candilis designed a grid urban plan for cities of al-Khobar, Dammam and Dhahran of eastern province of Saudi. (Figure 3.3)

The effects of modernisation did not only affect the residential and commercial buildings, but because of the urban expansion, and the new grid-like city design adopted by many of the cities, mosques equally went through the transformation process. An increased number of Friday mosques were introduced to the community, and new building technologies replaced the old building materials. Apart from this, modern construction materials were also adopted, such as pre-cast units, industrial paint and decorative items. Ashraf M. Salama (2014) has described the Friday mosque conditions in the pre-oil era in the following manner: 'The mosque's simple cubic form included an internal courtyard and was adjacent to an additional square. In fact, the size of the Friday mosque and its courtyard was often an expression of the number of inhabitants of an oasis town or coastal settlement' (Salama, 2014, p.139).

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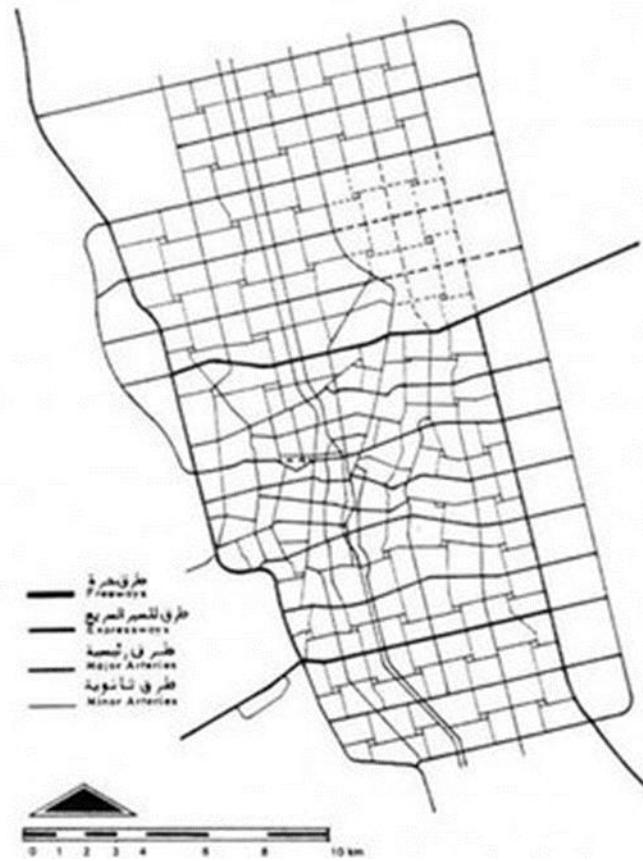
Figure 3.3: The 1972 master plan for Riyadh, designed by Doxiadis Associates. Source:

(http://archnet.org/library/sites/one-site.tcl?site_id=486.).

The transformation did not touch the primary function of the mosque as a place for prayer, with the change noticeable in the reinterpretation of design elements. Ottoman, Persian, Mamluks and many other architectural regional influences can be seen in many Friday mosques design, whether in the shape of the dome or the design of the mihrab, or the spatial layout of the mosque components. For example, the single frontal courtyard was replaced with multiple adjacent courtyards placed around the mosque building, to provide more space for the worshippers as in the case of the Riyadh state mosque. In Kuwait, the courtyard in the state mosque turned out to be a more dynamic space and competed with the size of the prayer hall. Furthermore, in the modern states, the Friday mosques became larger in scale than the smaller community mosques; the minaret became higher, when compared to the old squat minarets found in

Kuwait, Bahrain and Doha during the pre-oil period. More detailed explanations are provided in the next chapter.

b) ***The impact of oil revenues, continue to grow on the development of the city's urbanisation.*** Many changes have occurred on many levels in the Gulf region, in terms of socio-political and economic environments. Guided by the process of 'modernising' the states, the governments started to structure a system that regulates the buildings, the mosque became more divers in its functions and types.

In the pre-oil era, the decision of building a mosque and determination of its location within an urban context of neighbourhood or a settlement, was made by the community members, or the tribe leader or 'sheikh', wherein its construction affected by access to buildings materials, skilled masons and the availability of land. Commonly, in the Gulf, the community mosque was designed in a simplistic layout of courtyard and prayer room and singular minaret. As a result, the mosque was related to the local environment through this process and was perceived as a social entity that have connections with the inhabitants through its construction process and physical representation.

Whilst the Friday mosques architectural elements remained unchanged, the modernisation of the Arabian Gulf cities (especially the construction of relevant infrastructure such as airport, universities, hospitals, industrial and commercial complexes), led to the emergence of new urban centres, causing the Friday mosque to become not only based on the neighbourhood, but also a part of the new urban centres and institutions.

The mosque not only experienced transformation with regard to its architectural language, but also in terms of its type and function. While the Friday mosque maintained its main function as a mosque that serves for Friday prayers, other types of mosque has emerged as a sequence of modernisation, these are as follows:

- ***The Friday mosque built at the international airport,*** as seen in King Khalid International Airport in Riyadh. The mosque was built in 1984 as part of the master plan of the airport, designed by the American firm Hellmuth, Obata and Kassabaum Inc, with capacity that accommodates 5000 worshippers (Figure 3.4). In other cities throughout the Gulf region, mosques are integrated within the airport facilities as prayer room, and it can be used for the daily and Friday prayers as well. Here, the mosque is not a building, it does not have a mihrab or a dome, nor does it have a riwaq; it is meant to serve relevant travellers and employees. It has no physical traditional elements usually associated with a mosque but became a sacred place within its own confined space and for what it represents. Similar architectures are found in the shopping malls, where there are one or more prayer rooms depending on the size of the building.

Figure 3.4: King Khaled international airport mosque. Source: (Khan, 1991, p. 54).

- ***The Friday mosque in educational institutions,*** as in the universities and colleges. It became more common to build a mosque as part of the university master plan. Here, the mosque is a separate building built in approximate distance to the university's

buildings. Functionally, this mosque is a Friday mosque and also used for daily prayers, for instance, the mosque at the university of Kuwait built in mid-1950s. (Figure 3.5)

- *The Emergence of state mosque as discussed earlier.* As opposed to Masjid or community mosque, the state mosque is the national mosque of the country and hold significant position in terms of its political stature and architectural expression. Gulf countries have organised international design competitions with the aim of reflecting the local architectural culture throughout the mosque design. While Makiya and Badran's design schemes were the winner designs for Kuwait and Riyadh states mosque, respectively, El-Wakil, on other hand had never built a state mosque in the Gulf region. More elaborate discussion on state mosque competitions are provided in subsequent chapters.

c) *The regulations and codes of buildings*; Bahrain is the first country in the Gulf to have a municipality, in 1919. The municipality of Manama was only responsible for coordinating renting for shops and houses between tenants and landlords, and organising the cleanings of roads. It was only in 1960, when the municipality began to take more authoritative roles in organising the city building regulations and standards. The mosque was regulated based on a set of standards that are meant to maintain a common design criteria for all mosques in the country. For instance, the height of minaret was set to not exceed more than 15 metres for community mosque, the ablution facilities to be located on the east side of the mosque's internal vicinity. However, it was found through the field studies that most of the mosque's architects in Bahrain have not complied with the regulations and codes of mosque building, issued by the ministry of Islamic affairs. On the contrary to the city of Abu Dhabi, whereas mosque design is in a strict compliance to the local governmental regulations issued for the mosque design's criteria.

Figure 3.5: A Hungarian Photographer captured this photo Of Shouaikh high school in early 1950s, which is now Kuwait University Campus. Source: (https://liskw.wordpress.com/2009/12/18/1950-kuwait-university/).

3.5 The formal and spatial languages of the mosque: a literature review

This section explores in more depth some of the themes and concepts that have affected the formal and spatial languages of the Friday mosque. In reviewing the literature, the focus is maintained on the concept of architecture as language, and the associated themes of tradition, modernism, and contemporary and critical regionalism, which serve as parameters for examining and understanding the variations of language manifested and expressed in the Friday mosque of the Arabian Gulf. In order to provide clarity, each theme is handled separately with reference made to its relationships with other themes when necessary. The general objective of this section is to provide an initial framework that guides the investigation of the Arabian Gulf Friday mosque in regard to its transformation during the period specified in the study.

3.5.1 Language in architecture

The simplest definition of the word 'language' is 'the method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way' or 'a non-verbal method of expression or communication' (Oxford English Dictionary).

John Hendrix (2012, p.220) states that architecture 'has the capacity to communicate an allegorical narrative or philosophical structure, as a text of its culture. The vocabulary of architecture has the potential to incorporate visual symbols and signifiers in the form of historical references and iconological motifs'. Architecture as a language, could be the most appropriate approach to interpret the critical course of mosque architecture, for two reasons. Firstly, the mosque is a cultural building that evolved over the years and 'by definition one that transcends regional boundaries in its symbolic and functional sense, if not in its formal realisations' Hasan-Uddin Khan (1990, p.109). Secondly, each mosque has its own unique architectural components and symbolic elements, while retaining the common components which every mosque requires to provide its liturgical functions. To elaborate, each mosque should have a prayer room with a mihrab positioned at the centre of the qibla wall, oriented

towards the Kaaba. If the design has a minaret, it is usually built as a vertical structure. But each mosque also has flexibility when it comes to adding or omitting components of the design. The mosque, however, remains the paramount Islamic building which expresses the Islamic identity through its architecture.

Chris Abel (2000) discusses aspects of architecture as a language in his book '*Architecture & Identity: Response to cultural and technological change*', by evaluating the linguistic theories of 'language games'. Abel seeks to use linguistic theory to contribute to the understanding of the role of architecture as a culture-form in its own right. One approach in his comparison of architectural languages demonstrates this view (ibid., p. 89), by referring to the analogy with language:

> what we find then, is a hierarchy of language games, with at least three levels. At the broadest level, we have what linguists usually refer to as language cultures. Such cultures are often, but not always, synonymous with specific geographical regions and national boundaries. They may also contain more than one recognisable language, where all the languages in the group share a common cultural background. At the next level, we have those distinct language games which mark different cultural-forms. [..] At this level, history, literature, science, religion, myth, art and architecture all have their own distinct cultural purposes, inner logic and criteria of evaluation.

Abel argues that, architecture as a culture-form can take many forms, in the same way as religion. He refers to the work of Ludwig Wittgenstein (2009) who gives a new twist to the notion of a linguistic rule, by arguing that the social rule governs the use of language, and since meaning is something which is always shared, the behavioural rules of language are social in origin. Wittgenstein's theory of a language game, 'stresses the relation of language use to the function, code of behaviour and modes of expression of specific forms of social interaction and culture' (Abel, 2000, pp. 85-86). In other words, the 'language of architecture' is expressed through 'forms', and can be understood only from within, with reference to the design criteria, values and expressions.

Abel's three levels of language games, deal with various ways of using language. For example, the speaking language of an architect and a scientist are quite different, in terms of the way they use 'language' in their professional lives, but similarity of language can be found when there is a shared cultural background. In architecture, there are divisions like those found in religion. The differences here rise from the evaluation of the building's internal criteria, in the form of architecture adopted.

The internal criteria of the mosque, are governed by the social and liturgical practices. On a practical level, the prayer hall can be designed as set of rows in which worshipper perform their prayers. On another level, the position of the mihrab is determined by the undisputed divine command of directing the mosque towards the qibla. Both the social activities and the prayer rituals are related to a 'concrete spatial and formal manifestation of social practices presented as knowledge of mosque construction, such as building rules, social and aesthetic values, traditions, history, cultural and material constructs or design' (Azam, 2008, p. 47).

Thomas Barrie (2010) takes another approach to the architectural language of religious buildings. He argues that language here serves to communicate the building's symbolic content and establish its meaning. 'One "reads" its content through deciphering its language to construct its meaning' (ibid., p.5). But since meaning is dependent on context, it is essential to take into consideration all the contributing factors involved in shaping the language of a mosque; cultural, social, political, historical, liturgical and environmental, as well as the urban setting.

Interestingly, Stephen Gardiner in this book '*Kuwait the making of a city*' (1983, p. 77), views architecture as a visual art. He states that 'architecture is a portrait of people and place – a visual art that describes its subjects through buildings'. This doesn't contradict the view of

architecture as a language, as both art and words inherently carry expressions and meanings perceived by the viewer or user.

Andrea Simitch and Val Warke (2014) discuss architecture as language through 26 principles. They develop a systematic analysis based on the essential elements one needs to develop a visual language and skills for critical thinking, analysis, concept, and representation, followed by three of the elements of any design process; programme, context, and environment. They also consider the substances of architecture; mass, structure, surface, material, space, scale, light and movement, that serve to make physical substances legible.

The mosque architecture context is defined by its programme, and varies according to its design requirements. One mosque could have a courtyard at the front of the main building while other examples have internal and external courtyards. This is only an example to show how the mosque has many different aspects of spatial configurations. This variation could be the result of the architect's interpretation, urban spatial constraints or the client's desire. However, many traditional elements of the mosque, such as the minaret, courtyard, mihrab and riwaq are constantly present in most Friday mosques in the Gulf region, as this study reveals.

The formal language of a building is governed by three design concepts; context, meaning and expression. 'Meaning' in the mosque depends on the concept of 'representational' or 'symbolic' meaning and the measure of 'response.' Thus, meaning, as a concept in mosque architecture, depends on the user's perception, that is his feelings, thoughts or ideas, which occur as an experience generated through, and relative to, his practice of worshipping in the mosque.

Simitch and Warke (2014) argue that meaning in architecture is inevitably compounded by 'the final construction's relationships with its various contexts, by its interrelationships with other

known elements of architectural expression, and by the unique pasts and presents of each individual who observes the final construction' (ibid., p. 6).

In their book '*Theory of architecture*', Nikos Salingaros and Michael Mehaffy (2007, pp. 220-241), discuss two types of language in architecture, pattern and form languages. They describe form language as:

> The form language depends on an inherited vocabulary of all the components used in the assembly of a building; rules for how they can be combined; and how different levels of scale can arise from the smaller components. It is a particular and practical conception of tectonic and surface geometry. (ibid., p.221)

Neri Oxman (2010, p. 24) defines 'formal' as term used in architecture, saying 'formal, or formalist, indicates the emphasis upon form with the connotation of some means of rigorous representational description, or formalisation. In this sense, the term subsumes both the systemics of the formal content as well as the method of generation through formal representation'. This argument can be seen in the interpretation of the architecture of mosques in terms of language, but it might be seen most clearly in the mosque's architectural cultural representations and, more importantly, in the study of its spatial context, architectural forms and vocabulary.

This argument is supported by Robert Hershberger (1970, p. 42), who reinterprets meaning in architecture by providing models of meaning. (Figure 3.6) He writes that, 'in addition to meanings which are directly presented to the observer by forms, there are meanings attributed to forms by virtue of their use. In this case, the forms are used referentially – as signs or symbols of their use' (ibid., p. 49).

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                              Meaning
                   ┌ Representational    Responsive ┐
                   │ Percepts            Affect      │
Stimulus ─────────→│ Concepts ─────────→Evaluation  │─────────→Human
Object             │ Ideas               Prescription│          Response
                   │                                  │
                   └ Objective           Subjective  ┘
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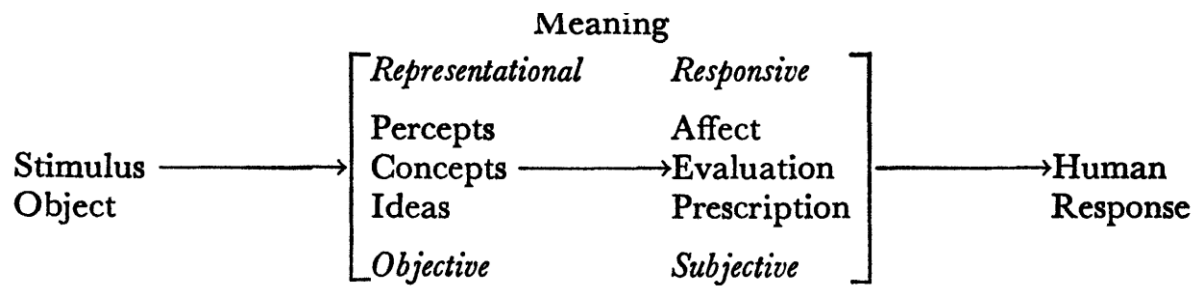
Figure 3. 6: Hershberger's model of meaning: 'the words or symbols within the brackets are intended to encompass "meaning" or a "representational mediation". (Source: ibid., p.42).

Generally speaking, a mosque as a building is recognisable by its visual architectural elements; the meaning here is functional and refers to the 'context', while function is the rule in force when it comes to the mosque's spatial layout. For instance, the prayer hall is a space defined by its function, within the guidelines governing the spatial layout, as the qibla wall has to be oriented towards the Kaaba, and is thus designed to accommodate users within its functional capacity. Its size is also governed by the purpose of use, be it a small village Friday mosque or a state mosque.

3.5.2. Tradition, contemporary, vernacular and modernism

Robert Hillenbrand (2000, p. 16) discusses mosque architecture in his book '*Islamic Architecture: Form, Function and Meaning*', in which he surveys pre-modern Islamic building types, ranging from mosques, shrines, mausoleums, madrasa and caravansaries to palaces. His approach is to delineate the function of each building, and how its architectural style develops over time. His discussion of the socio-political dimensions of the mosque indicates his understanding of how it evolves and functions. However, he refers to the Arabian hypostyle mosque of the Arabian Peninsula, excluding any reference to the mosques of the Arabian cities of the northern Gulf region.

Hillenbrand (2000, pp. 31-128) closely examines mosque architecture based on a typological approach, in which he classifies mosques based on three Islamic regional trends, Persian,

Turkish and Arab. His discussion of the various genres of mosque elements (mihrab, minbar, maqsura and dome) emphasises the issues of symbolism, function and meaning. For instance, he argues that the mihrab has a meaning behind its function (ibid., p. 16), which he describes as:

> divine illumination and as the gate to paradise. These ideas were fostered by its arched form, by the frequent depiction of a mosque lamp at its centre and by a framing band of Qur'anic quotations from the Sura of light. The association of the mihrab with Prophet and with royalty - for this was where the caliph stood to lead the Friday prayer - added yet another dimension of meaning to this already numinous form.

The review of the literature reveals numerous documentary and descriptive studies carried out by scholars of Islamic architecture, with a rapidly growing body of literature on the architecture of the Gulf region. Nevertheless, mosque architecture of the Arabian Gulf has, until now, remained a relatively neglected field with regards to its traditional architectural language and how it has transformed over time into a contemporary and hybrid form in its expressions and meanings. The written work of academics and scholars on architecture and its development in the Arabian Gulf has focused to a large extent on the struggles between modernisation and tradition in the built environment during the second half of the twentieth and early twenty-first centuries. Few attempts, however, have been made to address the state of the contemporary mosque in the northern Gulf.

William Curtis (1996, p. 15) states that 'a tradition may be ruled by dominant forms or governing principles, but it may also contain diverse standards, regional emphasis, internal loops, disjunctions and continuities'. This is also true when applied to mosque architecture. In fact, Islam does not prescribe formal architectural concepts, the architectural elements of a mosque are a product of social and liturgical behaviour - as discussed previously - owing their existence to the ritual functions of ablution, prayer performed toward Mecca (qibla wall), an

imam leading the prayers (mihrab), delivery of the Friday sermon (minbar), and the call to prayer (minaret). These functions are reflected in the mosque's spatial layout, urban context and design concepts.

Stefano Bianca (2000, p. 23) defines tradition as 'the chain of revealed truth, wisdom and knowledge, which is transmitted and renewed generation by generation, thus linking various successive layers of temporal existence to the primordial reality which originated them'. In this definition, Bianca suggests that tradition can be developed, but that this development is constrained by precedence as a foundation and thus should not be disconnected from the past in terms of its originality and values.

Discussions of the conflict between tradition and modernity in region are provided by prominent Figures in the field of Arabian Gulf architecture, such as in the published books and studies of the Egyptian author and academic Yasser Elsheshtawy. One important study that addresses the issue is presented by Elsheshtawy (2008) in two chapters of the book '*The Evolving Arab City: Tradition, Modernity and Urban Development*'. The chapters cover two areas; the first covers the cities of Amman, Beirut and Rabat, while the second is devoted to the cities of Riyadh, Kuwait, Manama, Doha and Dubai. Also, included in the book is Mashary al-Naim's (2008, pp. 116-149) article on Riyadh, in which he provides insights into the changing factors affecting Riyadh's urban environment, and its early steps towards modernisation. He discusses the way the architectural identity of the city has been threatened as a consequence of this process. While discussing the Qasr Al-Hkoum district project, Mashary briefly examines the Qasr Al-Hkoum Mosque, designed by Rasem Badran. He refers to it and the palace as representative examples of 'new tradition' language in Riyadh's modern history (ibid., p. 134). He explains that Badran's approach of embodying historical and cultural values and traditional Najdi elements created a new language that became a trend in the region during the 1980s. Mashary's view implies that Badran – who he does not name in the article

but refers to as 'the designer' – recycled the traditional forms of Najdi architecture and in doing so produced what Mashary calls a 'new tradition' language.

His analysis implies that Badran avoided the expression of modernism in his design in the search for 'authentic architecture', and draws attention to the client's rejection of Italian architect Marco Albini's proposed scheme for the district in the 1980s, which, according to Mashary, 'reflected the consciousness of the role of architecture, especially in those public buildings, to communicate the cultural and historical meanings of the site' (ibid., p. 136).

Contrary to Mashary's proposition that Badran rejected modernism, Suha Ozkan (in Petruccioli and Pirani, 2003, pp. 85-97) argues that Badran accepted modernism while at the same time embedding the cultural milieu surrounding the project site. When discussing Badran's project and Ali Al Shuaibi's Al-Kindi Plaza in Riyadh, Ozkan (ibid., p. 93) states that 'the aspect that most unifies all these architects is that they have neither denied or challenged modernism, but have accepted it as the lingua franca of contemporary architecture'. Yasser Mahgoub (2008, pp. 152-183) and Khaled Adham (2008, pp. 219-257), who discuss the development of the urban environments of Kuwait and Doha respectively, ignore the changes to the spatial and formal language of mosques that occurred during modernisation, but nevertheless provide insight into the socio-political conditions and general modernisation during the study period, which witnessed the architectural transformation of the mosques in the two cities.

The current literature on the Arabian Gulf mosque abounds with examples of state mosques, along with a few examples of community mosques. Khan (1997) frequently discusses state mosques in the Gulf in his studies and books, and brings clarity to the field with his significant contribution to the literature on contemporary mosque architecture in the Islamic world, including some mosques in Arabian Gulf countries. In his book '*The Mosque and The Modern World: Architects, Patrons and Design Since the 1950s*', the author presents a series of case

studies of contemporary mosques from various parts of the world. The study includes the Kuwait State Mosque, the state mosque of Saudi Arabia (Qasr Al-Hkoum), and a number of El-Wakil mosques in Jeddah, Saudi Arabia. These examples are often referred to by authors writing about the religious architecture of the Gulf.

Ozkan (1986, p. 297) argues that it's hard to debate the issue of identity in architecture without going into regionalism. A geographical region has its own cultural and environmental aspects, based on its society, mode of expression, climate and topography. Ozkan claims that modernism, for the last sixty years, has discarded 'regional' building activity. He refers to modernism as a sub-theme of internationalism:

> the schools of architecture, the building industry and popular 'taste', all united in the reinforcement of internationalism until it became an ideology representing the aspirations of all sectors of modern society. For more than half a century internationalism in style became synonymous with the representation of contemporaneity.

To respond to this architectural approach of modernism and internationalism, Ozkan suggests the critical movement of regionalism, which contains two categories, vernacularism and modern-regionalism.

> The regionalist approach recognises the vernacular modes of building at the one extreme, and abstract regionalism at the other. Even though it covers such a wide array of attitudes, regionalism has respect to the local culture, to climate and at times technology, at its core.

This differs from Kenneth Frampton's (2011, p. 314) take on critical regionalism:

> The term 'critical regionalism' is not intended to denote the vernacular as this was once spontaneously produced by combined interaction of climate, culture, myth and crafts, but rather to identify those recent regional 'schools' whose aim has been to represent and serve, in a critical sense, the limited constituencies in which they are grounded. Such a regionalism depends, by definition, on a connection between the political consciousness of a society and the profession. Among the pre-conditions for the emergence of critical regional expression is not only sufficient prosperity but also a strong desire for

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realising an identity. One of the mainsprings of regionalist culture is an anti-centrist sentiment - an aspiration for some kind of cultural, economic, and political independence.

The critical regional expression found in the northern Gulf region, reflects more similarities than differences. The cities of Kuwait, Muharraq and Doha, in addition to the eastern province of Saudi Arabia, share some of the spatial organisation of the urban fabric of the residential quarter known locally as freej. The traditional mosque characteristics are common to these cities, while Riyadh in the central Najd region and Muscat in Oman have fundamentally different regionalist expressions. There is in-depth discussion of this in the following chapters.

Since most Gulf countries have only achieved independence since the 1970s, and with rapidly changing conditions, traditional regional mosque design has been subject to the influence of internationalism and modernism. The mosque has been affected by various factors including regional expression, the client's point of view about the design, and the architect's role in the process, which might be constrained by the nature of funding, the urban settings of the site or the client's demands. The state, as client in the Gulf region, engages in building state mosques as an expression of political power and national identity. The intention is to build monumental structures that reflect grandeur and wealth. In my interview with Rasem Badran (2012) he stated:

> The state mosque is associated with a political decision by the ruler, who would say if it would not have domes or minarets, then it is not a Jami. They usually request a monument and that's why considerable amounts are spent on it, which is a disaster. These mosques do not resemble any form of time narratives. Ibn Tulun and Hassan mosques were, at the time, considered modern expressions. But now the mosques have become literal copies of the Islamic mosques of Mameluke and Fatimid.

3.5.3 The Contemporary Mosque

Hassan Fathy (1992) provides a definition of the term contemporary in his article '*Contemporaneity in the city*':

it must be part of the bustle and turmoil, the ebb and flow of everyday life; it must be related harmoniously to the rhythm of the universe; and it must be consonant with man's current stage of knowledge of change. This, it will be seen, is a wide and comprehensive definition of contemporaneity. I feel it is necessary, though, because of certain prevalent misconceptions about what is 'contemporary'.

Fathy's definition stresses the importance of the relationship between the user, nature and society, and that architecture should position itself in order to provide a sense of continuity and depth in its overall context. Contemporary in architecture means 'relevant to its time', and hints at the temporality of places and buildings. Khan (1997, p. 15) discusses the problems of designing contemporary mosques, arguing that in order to achieve a contemporary formal language in mosque design, architects must turn to historical Islamic models for inspiration.

Friday mosque architecture in the Gulf reflects an attempt to find a balance within the societal transition from the pre-oil era to rapid modernisation during the period 1975–2010, covered by this study. Mosque architecture has resisted the wave of modernism in the sense that it remains in line with the prevalent values of Islamic tradition, which favour perpetuation of the classical vocabularies of the mosque's Islamic architectural elements, such as the dome, minaret, courtyard, portal (or gate), and mihrab. This is not to suggest that the path of mosque transformation in the Gulf has not kept pace with other built forms. Friday mosque architecture, which is governed by both internal and external forces, has indeed gone through a transition phase, after being exposed to the influence of globalisation, including the introduction of architectural styles from other regions not previously common.

The ease of adopting new architectural typologies and mixing architectural languages has led to the emergence and spread of a new 'hybrid' typology in recent years. The shift is not only in scale, but also in socio-political and cultural position. The employment of modern materials and technologies in mosque construction has contributed to the transformation process, and the theoretical framework behind the evolution is also a factor. Reinterpretation of local traditional

architecture by Gulf mosque architects has yielded new architectural and spatial languages throughout the Gulf region, that blend 'modern', 'contemporary,' and 'traditional'.

Khan (1997, p. 14) addresses the factors that have enriched the practice of contemporary mosque architecture, saying:

> competitions, whether opened or limited, for the design of mosque buildings and complexes have had a key effect in raising interest among architects in the problems of contemporary mosque design. Participants in these competitions, whether architects, clients or jurists, may have impacted the contemporary mosque conditions, even if their discussions or results are not always published.

For instance, in the case of the Kuwait State Mosque competition, there are no published materials available on the participants' themes or the client's remarks on the designs. However, due to the efforts of the Aga Khan Award for Architecture, established in 1977, and the Aga Khan Program for Islamic architecture at both Harvard University and the Massachusetts Institute of Technology, established in 1997, the subject has received increased awareness from the public and the architectural community. As stated by Aazam (2008, p. 56):

> This support has made its impact on the critical views of what Islamic architecture is and the question of the contemporary condition. Most of these publications raised issues like form, style, symbolism, expression and spirit of Islam within the context of regionalism, continuity and change of the Muslim community.

3.6 Conclusion

This chapter started by providing a definition of the Arabian Gulf in terms of its geographical context. It also briefly discussed the socio-economic background and the main events that shaped the evolution of the Friday mosque. The literature covered concerns the concept of architecture as language, and themes pertaining to tradition, modernism, nationalism and critical regionalism, which are the parameters for analysing the case studies and the work of the three main architects covered by the study. It provides theoretical milestones through which

to understand the transformation of the Friday mosque's architectural language, and the overall evolution of architectural language in the Arabian Gulf.

CHAPTER FOUR

THE ARABIAN GULF: DEFINING THE CHARACTERISTICS AND TYPOLOGIES OF HISTORIC MOSQUES

4.1 Introduction

The aim of this chapter is to investigate mosque typologies in the cities of the Arabian Gulf by addressing the following questions: In what context, can the mosque in the Arabian Gulf be defined? And, how has the mosque's architectural identity in the Gulf region been shaped with reference not only to its Islamic nature, but also to socio-political systems development and local traditional architecture?

Although the intent of this thesis is not to explore the historical context, this chapter aims to set a foundation for historical mosques' socio-political identity in Arabian Gulf cities, draw a picture of historical Friday mosques in the Arabian Gulf, and direct the reader to the following chapters.

It is essential to build an understanding of mosque identity, what it represents, and the liturgical constraints on its design, in order to formulate the make-up of the mosque's formal and spatial language. The chapter starts with a section introducing the mosque and its essential architectural components, then it provides an overview of approaches to identifying the mosque in the Arabian Gulf, followed by a discussion of the socio-political dimensions of the historic mosque in terms of the spatial identity and typology of the Friday mosque. It concludes by presenting an analysis of two case studies of traditional mosques from the regions of study, Bahrain and Qatar, as these regions share most of the characteristics of the traditional Friday mosque.

4.2 Mosque definition: history, typology and 'spiritual' meanings

'The mosque is the most distinctive expression of symbolic value and liturgical identity in Islamic architecture with its formal and functional characteristics. This Islamic quintessential building began in the seventh century of the Christian era' (Frishman and Khan, 2002, p. 11). For a simple identification of a mosque, it could be described as a place or building oriented toward Mecca, where Muslims conduct their prayers and perform their rituals of worship, which consist of two basic stages, ablution and the act of praying. The Quran, which mentions the mosque, 'masjid', 28 times, clearly defines the mosque as the place where the Muslim worships and expresses his or her belief in the unity of God through prayer: 'and the places of worship are for Allah (alone): so, invoke not anyone along with Allah' (Qur'an, Su. 72:18). 'Masjid' is the Arabic translation of the word mosque, derived from the act of 'sajood', which means prostration, which is when the prayer's forehead touches the ground in an act of submission to God. Accordingly, the main physical straightforward function of the mosque is to provide a space in which to perform the five times a day prayer.

It could be said that the mosque, similar to other religious buildings like the church or temple, has always had an intimate link to the domestic and political matrix of the local community, hence the social role cannot be separated from the act of worship. The mosque was not only a place that worshippers performed their prayers, but a centric space for the gathering of the small-scale community of Muslims in Madinah to debate social matters, make announcements or discuss political issues. Specifically, these activities embody the Islamic social values and principles that are derived from the guidance provided by the tradition of Islam, and define the important role of the mosque.

This role is manifested in the spatial organisation of mosques in the Arabian Gulf, and was seen in the early mosques of Islamic history, as political, social and educational events were held within the mosque's interior and exterior spaces. These ceremonies were usually

conducted in the courtyard or prayer hall, the main, inner covered space, or 'musalla', containing the mihrab, which is the prayer niche that serves as an indicator of the direction of Mecca and the minbar, a platform usually made of wood and designed with a few steps leading to a seat which the imam uses to deliver prayers and the Friday speech.

Khan and Frishman (2002) in their book '*The Mosque: History, Architectural Development and Regional Diversity*', and Andrew Petersen (1996) in his '*Dictionary of Islamic Architecture*', define the mosque, with various interpretations, based on consideration of the physical and liturgical structure, the socio-political importance and the architectural design.

Scholars and researchers of Islamic architecture compare the early formative stage of the mosque's development to the Prophet's residence, built when he immigrated to Madinah in 623AD (Figure 4.1), by describing the simple layout of the mosque as consisting of an enclosed square courtyard with accommodation rooms for the Prophet and his wives in the south east of the house. The Prophet's mosque in Medina formed the prototype to which all subsequent Islamic religious building adhered. Martin Frishman stated that 'the early development of the mosque was based on the house of the Prophet at medina with its living accommodation ranged along two side of enclosed courtyard' (Frishman and Khan, 2002, p.32).
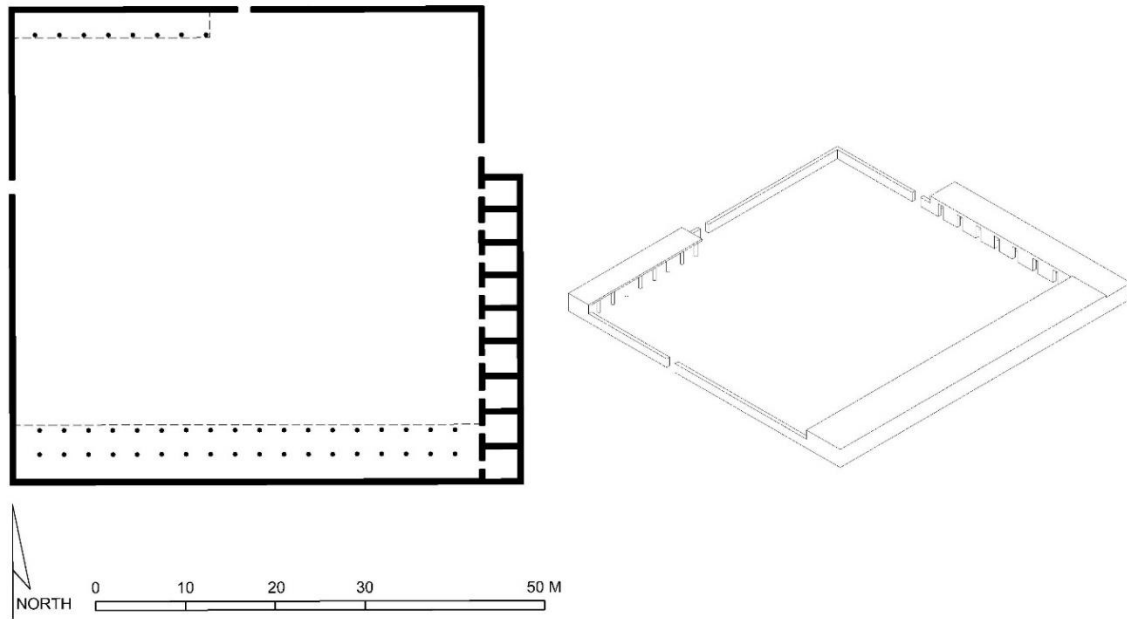
Figure 4.1: The Prophet's mosque in Madinah (source: Nasser Rabbat / Aga Khan Program for Islamic Architecture, MIT).

We can build an understanding of the rise of various typologies, by looking at how they have developed since the first mosque was built. The mosque's simplistic requirements of delineated clean space and orientation towards the Mecca, provide a wide scope for the development of mosque design, and their incorporation of the vernacular traditions of the countries where they are built. Nevertheless, throughout the ages, since the first mosque was built, a number of architectural elements, symbols and signs have come to be associated with mosques, such as the minaret, mihrab and minbar, as well as domes.

Hillenbrand (1985, p. 33) describes the mosque as follows:

> The mosque is the principal religious building of Islam, and paramount among its many functions is communal prayer. In its simplest and most widespread form the medieval mosque comprised a courtyard bordered by arcades adjoining a covered hall.

This simple definition provides a general notion of the mosque as an Islamic building that varies throughout the vast region of the Islamic world, with a visual language that represents a

collective Islamic identity, yet reflecting variations in cultural identity from one region to another (Figure 4.2). However, the architectural design of mosques has changed throughout history, influenced by local vernacular construction techniques as well as cultural identities and local traditions. The following Figure shows the five basic formal mosque types based on seven regional styles, categorised by Frishman and Khan (2002, p. 13).

The five basic categories of mosque design occur in seven
distinctive regional styles; the sketches do not show specific
mosques, nor are they drawn to scale.

The Arabian heartland, Spain and
North Africa: the hypostyle hall and
open courtyard.

Sub-Saharan West Africa: the
hypostyle hall using mud-brick or
rammed-earth construction.

Iran and Central Asia: the bi-axial
four-iwan type.

The Indian subcontinent: triple domes
and an extensive courtyard.

Anatolia: use of massive central dome

China: detached pavilions within a
walled garden enclosure.

South-East Asia: central pyramidal
roof construction.

Figure 4.2: Frishman and Khan's five basic formal mosque types based on seven regional styles
(source: Frishman and Khan, 2002, p. 13).

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4.2.1 Principals and underpinning of mosque architecture in the Gulf

Arab-plan or hypostyle mosques are the earliest type of mosques, pioneered under the Umayyad dynasty, and based on Profit Mohamed Mosque (PBUH) which was the first mosque in Islamic history, described as a design 'born in the Arabian heartland and developed up to the middle Abbasid period in the tenth and eleventh centuries' (ibid, 2002, p.11).

These mosques are square or rectangular in plan with an enclosed courtyard and a covered prayer hall. Historically, because of the warm Mediterranean and Middle Eastern climates, the courtyard served to accommodate the large number of worshippers during Friday prayers. Most early hypostyle mosques have flat roofs on top of prayer halls, necessitating the use of numerous columns and supports (Hillenbrand, 1985, p.33). This elemental simplicity of the Mosque can still be seen in many of the historic mosques in the Gulf countries. The so called Arab-plan mosque still retains this elemental simplicity, even though in recent decades a 'hybrid style' combining other typologies and architectural languages has started to emerge with rising economic wealth and easier access to building materials and construction technologies.

It is observable that mosque design accelerated over time, resulting in a multiplicity of distinctive typologies across the regions of the Islamic world. For example, the Arabian hypostyle mosque, with a flat roof and open courtyard, predominates in the Arabian Peninsula, Syria, Spain and North Africa. The four-iwan mosque predominates in central Asia, being seen in Iran and Afghanistan, while mosques in the Indian subcontinent feature triple domes and a central courtyard. The central dome plan mosque represents the Ottoman style in Anatolia. Meanwhile, in China, the pyramidal roof and walled enclosure mosque shows the strong regional character of Southeast Asia. The final typology is the West African hypostyle hall mosque with a flat roof and enclosure vaulted with mud brick walls. Most of these mosque typologies have spread, or at least influenced the design of mosques beyond their regional

territories. Some of the historical mosques of Egypt display Ottoman architecture and continue to be an inspiration to mosque architects in the Arabian Gulf and North Africa.

One reason we need to understand the geographical range and character of Islamic typologies is that in the Gulf countries many styles exist, in often quite hybrid ways. Ottoman and Mamluk forms are popular, as are North African ones both in form and detail. The 'Arabian heartland' form, has lavish detail and materials which are rare in the Gulf for both economic and religious reasons. For example, muqarnas can be found widely now, and embellished and decorated domes and mihrab are also more common. The following chapters provide examples that support this argument.

In the historical mosques of Najd and the eastern province of Saudi Arabia, towards the Arabian Gulf cities, variations in shape and design have prevailed due to four main factors: the influence of the colonial periods, such as the Ottoman Empire in the seventeenth century; the availability of local building materials; the various Islamic movement traditions found in the Gulf countries, such as Wahhabism in Najd and Qatar, Ibadism in Oman and Shi'ism in Bahrain and Kuwait; and the Persian cultural impact of waves of immigration of Persians to the western coast of the Gulf which brought new knowledge of construction and design, including badghir (wind-towers) which are widely used in houses and mosques. These factors all contributed to the creation of an architectural identity that reflects the various regions of the Arabian Gulf (Farry Kazerooni, 2002, p. 64).

4.3 Approaches to identifying mosques in the Arabian Gulf

In order to define the mosque in its broad context, describing its basic elements, an approach analysing the spiritual and historical values embodied in the symbolic forms and spaces is adopted. This research explores the components of mosques' architectural elements and interior decoration. It is notable that some efforts have been made by scholars to study Islamic

architecture through the symbolic and hidden themes within the architecture that represent Islam (Alsayyed, 2012, p. 50).

Due to the Gulf's socio-political history and the architectural transformation period that the Gulf region witnessed in the late twentieth century, a second approach is taken, exploring the socio-political meanings that form the mosque's spatial identity, and the local traditional architecture that leads to the design concepts behind the mosque's spatial organisation.

4.3.1 Interpretations of the spiritual values embodied in the symbolic forms and spaces of mosque architecture

In Islam, there are three sacred mosques according to the Quran, and the Profit's (PBUH) Hadith: The Holy Mosque in Mecca '*Al-Masjed al-Ḥarām*'; the Prophet's (PBUH) Holy Mosque in Madinah '*Al-Masjed an-Nabawi*'; and the Mosque of Jerusalem '*Al-Masjed Al-Aqsa*', with the mosque in Mecca considered by Muslims to be the holiest place on Earth.

According to the teachings of Islam, materials are not treated as sacrosanct. The Quran does not specify any sacredness as associated with the mosque's components, furniture or decoration, or any symbols or colours to represent Islam. Therefore, the mosque is a religious building that is not 'sacred' in itself, but rather through the rituals and practices performed by the believers, serving as a place to connect with God - bearing in mind that the act of prayer in Islam does not require a building; any clean place will meet the purpose of prayer. Furthermore, as per the Prophet's (PBUH) Hadith, the creation of images or the making of sculptures of humans or animals is prohibited. This aniconism in Islam is mentioned in the Quran, but is mainly discouraged by Sunni teachings. In addition, the commonly known Islamic symbols in mosque architecture, such as the minaret, fountain and garden, are the result of inspiration and borrowing vocabularies from pre-Islamic buildings, accumulated throughout

time, developed and influenced by the ideas of Muslim artists, architects, thinkers and politicians.

On a different level, some of the mosque's architectural elements possess cosmological indicators that intersect with spiritual meanings deriving from the Quran's teachings. These symbolic systems are integrated into the morphology of mosque architecture. Nevertheless, symbols and signs are not seen in the architectural context only, but in the decoration too; the parts of the mosque that do not interfere with its structural stability. Some of these are symbolic, appearing in medieval dictionaries, and are accepted by the majority of Muslims, raising the question of how the 'meaning' relates to the design, and by which context the element (architectural or decorative) should be interpreted according to its iconological detail. This process of symbolic systems is manifested in the various applications of Islamic art and patterns in mosque architecture. The decorative treatment of the surfaces, spaces and forms of a mosque include the geometric patterns, motifs and ornaments that prevail in the interior design of mosques, and encompass a variety of styles and traditions. An example of this is the muqarnas, which is a three-dimensional structure made using concave elements, assembled according to complex geometric rules, with a goal that is more ornamental than structural. This decorative device, used in various parts of the mosque's interior and exterior, has been described as a bridge that connects the horizontal and curved spaces, implying the earth (linear) and divine (circular) realm.

Oleg Grabar (1980, p.5) argues in his paper '*Symbols and Signs in Islamic Architecture*' that 'a symbolic element is usually the definition of something and connotes it but does not circumscribe it as does a sign or an image'. He explains further that 'the symbol attribute is variable which depends on some "charge" given to it or on the mood or feeling of the viewer'.

In this chapter, the three most important components of mosque design, the minaret, the dome and the mihrab, are defined based on their historic meanings and the symbolic forms they represent, leaving out the maqsurah, dukkah and kursy as they are not customary in Arabian Gulf interior mosque architecture. An exploration is included of the various forms and designs of these components existing in historical mosques of the Arabian Gulf cities, which paved the road for the construction of the spatial organisational identity of Arabian Gulf mosques.

4.3.2 The minaret

Islam accepts many architectural forms and design concepts by gradually absorbing and integrating existing pre-Islamic building forms in areas where Islam spread. Forms characterised by their regional or religious context have been modified and transformed over time by devoted builders' imaginations and craftsmen's skills, to be adopted into the Islamic context, establishing a specific Islamic identity, including the dome and the minaret. The latter's main function in mosque design is to provide a visual focal point, and it is used for the call to prayer (athan), which was the motivation for its invention and has become universal since the fourteenth century (Frishman and Khan, 2002, p. 40). The word 'minaret' is derived from the Arabic word 'manārah', which refers to a 'light tower' or 'light house'. As such, one might assume that Muslims in early periods of Islam were inspired by the light towers or fire temple towers found in previous traditions and cultures of Islamic history.

'K. A. C. Creswell has shown the minaret developed out of the corner towers of the temenos of the Church of St John the Baptist in Damascus, when the entire area was taken over to build the Umayyad Mosque' (Dickie, 1978, p. 34). It is, however, impossible to attribute a specific time to the origin of the minaret, due to the lack of any historical record of the first minaret built in Islamic history (Gottheil, 1910, pp. 132-133). It is not essential to include the minaret in mosque architecture, but it served, in the early centuries of Islam, as a local landmark or lighthouse (Frishman and Khan, 2002, p. 41). Its function is not liturgically restricted, and this

points to a less profound spiritual meaning behind minaret design. However, this does not necessarily imply a less sacred value to the minaret as part of mosque morphology. The mosque, as a whole, is sacred, such that 'all parts of the mosque are equally sacred and its architecture embodies no hierarchy of importance' (Hillenbrand, 1985, p. 34).

This argument is supported by two undeniable facts: firstly, the conceded fact that the earliest mosque in Islam had no minaret at all and the call to prayer was given from the roof of the Prophet Mohammed's (PBUH) house; and secondly, the absence of any mention of the minaret (or dome for that matter) in the Quran or Hadith traditions, which points to there being less importance to the minaret in mosque design. 'The minaret, if separated from the mosque and thus divorced from its function as the place from which to call to prayer is made, becomes simply another tower' (Frishman and Khan, 2002, p. 32).

The minarets found in the historic mosques of the Gulf region have various shapes, heights and designs. This variation is a result of local religious traditions, the building materials available, and the architectural environment. For instance, in Najd, where Wahhabism is the dominant religious force, Mosques dated to the eighteenth and nineteenth century shared a common design of a simple rectangular ground plan attached to an open space, sahan, and one minaret usually erected at the northern corner. The minaret in Najd has a distinctive character, represented by the fort-like minaret tower with small triangular openings (Figure 4.3). Some of the old mosques in Najd have no minaret, such as in the Friday mosque of Riyadh, as described by Palgrave (1868, p. 267) in 1863:

> Tower or "Ma'dinah" (minaret, we generally call it) there is none; but in its stead a small platform slightly raised from the roof-level; above the Mihrab, or station allotted to the Imam at time of prayers, stands on the roof a sort of closet or small apartment, into

which old Feysul finds admittance on Fridays by the covered gallery before described, and acts invisible Imam to the assembly below. No mats or carpets.

Figure 4.3: A fort-like minaret in the Najd region blends in with the urban fabric (source: Albini, 1998).

Minarets are present however, in the historical mosques of the west coast of the Arabian Gulf region, circular or square in plan with cylindrical, rectangular or pointed shafts, with one or more balconies. An example of this is the Khamis Mosque in Manama, Bahrain, dated as early as 692AD (Figure 4.4), and known historically as the Mosque of Two Minarets. The first, western, minaret of the mosque was built in 1124AD and the eastern minaret was erected two centuries later in the period of the Usfurids dynasty (1252-1330). The two cylindrical minarets of Al Khamis mosque rise from a square base with one balcony, with openings on the polygonal top tier of the minaret, and ending in a pointed cap. The mosque was the first built outside the

Arabian Peninsula that remains, and the design of the two minarets represents the period in which they were built, around the twelfth century.

Figure 4.4: Al Khamis Mosque in Manama, Bahrain (2011). Source: (photo by the author).

4.3.3 The dome

Domes, which have precedence in pre-Islamic civilisations and occupy a significant position in Islamic architecture, have been widely used in many historical cultures since, such as the Sassanian and Roman periods, and continue to be a main feature of palaces, mosques, mausoleums and shrines. The origin of the dome is discussed by Grabar (1963, pp. 191-198) in his essay '*The Islamic Dome, Some Considerations*', in which he points out that the records of the dome in pre-Islamic history are incomplete. However, it is known that the dome was adopted as an architectural form in mosques as a revival of the domes in mausoleum and palace architecture. 'Muslim secular architecture adopted domical halls in palaces as early as in the monuments of the eighth century; that is, considerably before domes became standard features of religious buildings' (Grabar, 1963, p. 196).

The first dome built in Islamic history was in 691AD by Umayyad caliph 'Abd al-Malik Ibn Marwaan', the Dome of the Rock in Jerusalem. As mentioned, the dome appeared in many building types, with a variety of construction methods and design styles. For example, the large central dome was heavily influenced by Byzantine religious architecture. The location of the

dome in the building is governed, particularly in mosque design, by the principle of directionality. The fact that the dome did not become a standard feature of the mosque, whereas the mihrab did, suggests that its purpose was not liturgical. Its use must have been other than to identify a significant spot in the ceremony of prayer. Despite the controversy over the origin of the dome, it has been considered throughout history to be a cosmic symbol in every religious tradition, and a representation of 'heavenly paradise'. The interior surfaces of the dome are in some cases simple and plain or decorated with aesthetic designs in various styles and patterns. Since the use of images in mosques is strictly forbidden, symbolic abstract decoration, such as geometrical patterns, ornamental motifs or muqarnas, is encouraged. Dickie (1978, p. 34) describes the Dome of the Rock in his essays '*Allah and eternity: Mosques, Madrasas and Tombs*':

> An outstanding example of such decoration is found in the Dome of the Rock, where a highly stylised cosmological tree - which in Islam grows upside down - spreads downwards from the apex of the dome to embrace all the widening stages of heaven by the time it reaches the foot.

Likewise, window openings built around the dome transmit daylight during the day to the confined prayer hall, giving the sense of 'light from heaven', said by the Quran to imply 'divinity', and create a calm, peaceful environment that enhances the worshipper's performance of his meditation and concentration on his prayers.

The dome also has a symbolic meaning of power and authority. In the Arabian Gulf, the presence of the dome in mosque morphology was ruled by religious traditions. For instance, the historic Friday mosques of Najd were built with flat roofs with no domes, as was the Great Mosque of Riyadh, which was built in the first decade of the nineteenth century by Imam Turkey Bin Abdullah, who moved to Riyadh and built the mosque attached to his fortified palace (Figure 4.5). The absence of the dome is based on Wahhabism's restrictions on building mausoleums, which are usually built with domes. This mosque was restored in 1995 by Rasem

Badran, who won the Aga Khan Award for the project, and is further investigated as a case study in Chapter Seven.

Figure 4.5: The Great Mosque of Riyadh. Source: (Albini, 1998).

Notably, on the west coast of the Arabian Gulf region, Kuwait and Bahrain have a similar absence of domes in mosque architecture. This is particularly evident in Sunni mosques, where the dome is considered part of a mausoleum's structure, which is disapproved of in Sunni traditions. Al Khalifa Mosque, one of the oldest mosques in Kuwait, built around 1737AD, has one minaret with one balcony and a notable absence of a dome (Figure 4.6).
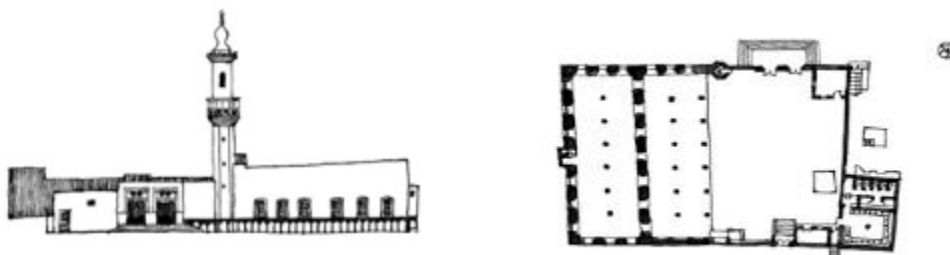
Figure 4.6: Sketches of the elevation and floor plan of Al Khalifa Mosque in Kuwait. Source: (Khattab, 2002).

Mosques located in the region now known as the United Arab Emirates were built with domes in various styles and positions. For example, Al Badiyah Mosque (Figure 4.7), the oldest mosque in the United Arab Emirates, in Fujairah city in the north of the country, consists of

helical domes and a simple square prayer hall hosting a single pillar supporting the ceiling and a raised courtyard. The shape of the domes and the outline of the mosque represent an ambiguous architectural style.

This archaeological building has been studied by the University of Sydney in co-operation with the Fujairah Archaeological Centre. 'Some studies have estimated that the Masjed was built in 640AD. Others indicate the building may have been built as long ago as 1446BC, meaning it had other uses before it became a Muslim house of worship' (Eugene Harnan, 2011). The continuous use of Al Badiyah Mosque to the present, without alteration to the mosque design or its spatial organisation, indicates the acceptance of the mosque design by the Muslims who have used it over the centuries. The dome, as an element of mosque architecture, spread to other Emirates, as shown by the Bur Dubai Grand Mosque, originally built in 1850 and restored twice, firstly in 1952 and secondly in 1999 (Figure 4.8).

Figure 4.7: Al Badiyah Mosque in Fujairah city. To the right are the mihrab and the minbar. Source: (Mohcinali, 2012).

Figure 4.8: Bur Dubai Grand Mosque restored to its original design in 1999. Source: (photo by the author).

4.3.4 The mihrab

The mihrab, or niche, which is usually placed right next to the minbar, is one of the main interior components of the mosque, acting as a spatial axis integrated into the mosque's interior space. However, it has no functional characteristics other than indicating the direction to Mecca (qibla) 'it is not the niche that is sacred but the direction it expresses' (Dickie, 1978, p. 34). It is a concave space or flat formation at the centre of the qibla wall, and receives the most focus in decoration of all the components of the mosque. However, there is no indication of the mihrab in the earliest mosques, and the first mihrab ever built was considered an addition to the qibla wall of the first mosque in Islam. 'The first concave mihrab appears to have been inserted into the Prophet's (PBUH) Mosque in Medina during restorations carried out by the Umayyad Caliph Al Walid I in 706' (Petersen, 2009, p. 186).

In the historical mosques of the west coast of the Arabian Gulf, the design of the mihrab is a concave square space in the middle of the qibla wall, with a convex mihrab expressed on the exterior of the wall. This serves as an indication of the qibla direction for the public and surrounding houses, and adds a spatial characteristic to the mosque's exterior. The absence of

the minbar as a separate element is noticeable, specifically in Bahrain and Kuwait, where the imam uses the canopied space of the concave mihrab to deliver the Friday sermon (khutbah). This double function of the mihrab emphasises its spatial identity in relation to the sanctity of the prayer hall, and represents the direct connection between the imam and the worshippers. On the other hand, the stairway minbar in Ottoman mosques and the tall structure minbar in North African mosques, used by the imam to deliver the Friday sermon to the crowd, express a second level of connection, both visually and acoustically.

In Qatar, Bahrain and Kuwait, mosques built in the first decades of the twentieth century have a concave mihrab with either one or two smaller scale domes built on the projected part of the mihrab on the exterior of the qibla wall. An example of this is the Western Qalali Mosque in Bahrain, dating back to 1910 and restored twice in 1950 and 2001. This mosque represents the Arabian hypostyle design with an open courtyard, flat roofed prayer hall and one minaret at the northern corner (Figure 4.9). The single pointed dome built on the top of the mihrab alcove at the exterior elevation of the qibla wall seems to replace the absent main dome. It is in harmony with the morphology of the mosque and an important element that leads the focus in the direction of the qibla. Another example from the same period is the Mosque of Simaisma in Al Khour village in Qatar (Figure 4.10). This mosque was built in 1938 and was designed similarly to the Qalali Mosque, with the mihrab in a concave square with two domes built on its roof. In this mosque, the mihrab's interior space is divided by a column into two parts, one in which the imam leads the prayers and the other where he stands to deliver the Friday sermon.

Figure 4.9: The Western Qalali Mosque, Bahrain. Source: (Aljowder, 2003, p. 329).

The mihrab decoration in the nineteenth and twentieth century mosques of the Arabian Gulf is very simple, with no indication of muqarnas as a decorative element. On the other hand, muqarnas were widely adopted in the mosque interiors of Egypt, Iran and North Africa, reinforcing the spiritual dimension with vaults on the inner walls of the concave mihrab. Classical vaults embellished with curving borders were the source of this Islamic concept of the vault representing the 'canopy' (thaillu) of Allah on Earth.

Figure 4.10: The Mosque of Simaisma's exterior qibla wall with two mihrab domes (source: Ramadan, 2009, p. 76).

4.3.5 Building materials

This section aims to identify the Arabian Gulf's vernacular building materials, mosque layout and design attributes. Materials vary by region and, to a large degree, influence the nature of the buildings. In general, the architecture of the area is predominately stone, mud and coral. The use of 'coral was mostly confined to the coastal areas, and stone used in areas close to the mountains with mud used throughout central Arabia' (King, 1998, p.110). Wood is used both for structural and decorative reasons. On the coast, mangrove poles are widely used, mostly imported from East Africa and India, and the length of the mangrove pole, averaging around 2.8 meters, is a limiting factor in the design of room widths. Other materials include palm trees for wood and thatch.

The building materials in Bahrain are similar to those used elsewhere in the Gulf and include limestone and coral blocks for masonry and palm trees for wood and thatch. In addition to coral panels, plaster screens are used as a means of ensuring privacy in the upper part of the house. These screens are often decorated with geometric patterns, the most common of which is a series of intersecting rectangles producing a stepped pattern.

4.4 Mosques' socio-political dimensions and their expression in terms of spatial identity

The first objective of this section is to investigate the socio-political aspects of the mosque in the pre-oil era, focusing on the period starting in the 1900s, to provide the background with which to compare mosque architecture during the period 1975-2010, in the context of the traditional urban fabric of Gulf cities. The second objective is to investigate how mosques' spatial and social characteristics differ across the various religious groups in the Arabian Gulf. In order to explain the urban fabric of a city in the Gulf region, prior to the architectural transformation that occurred as a result of the escalated economic development of the 1930s and 1940s, an approach analysing the historical composition of the physical and social entities

that shaped the local traditional urban environment, and the role of the Friday mosque in this process, is adopted.

Bianca (2000, p. 24) argues that Islam as a religion does not provide architectural codes for planning Muslim cities, but rather the principles of a social framework are embedded in a matrix of behaviour in the form of the daily religious practices of the individual and society. This, in fact, is where the Friday mosque derived its social and religious structure and came to be a main element of the urbanisation of the Islamic city. The concept of planning was first established by the Prophet (PBUH), when he built his mosque in a central location in Madinah. A process of urbanisation began around the mosque with a distribution of lands to the tribal communities of *Al-Muhajreen* (travellers from Makah) and *Al-Ansar* (locals of Madinah), leading to the formation of tribal quarters where they built their dwellings and a system of settlements based on their needs.

This organisation of social space was a manifestation of the fundamental Islamic concept of ummah (oneness) and, according to Hisham Mortda (2011, p. 72), 'the urban structure of a Muslim town relates the strong similarity of the urban pattern of the traditional Arab Muslim cities to Prophetic zoning'.

 It is argued by Al-Hathloul (1981) that the society of an Islamic city maintains its continuity of social tradition, in as much as it relates to the physical environment, by holding to unwritten rules and social conventions that produce a system of regulation of the urbanisation of the city and its building codes, with the supervision of the legal authorities represented by Al-Qadi, or the judge and the appointed jurists, as Al-Sharia'a and Sunnah are the main Source of Islamic law. An example of this would be the issue of privacy in residential buildings, such as the height of walls or the level of windows. The prevention of harm to the public and improving the quality of life are issues in the location of public buildings. Materials of construction and

building techniques are other examples of issues in planning the urban environment of Islamic cities that were the responsibility of the official Islamic authority. This urbanisation system was the basis on which Islamic cities were planned. However, each region of the Islamic world has its distinctive urban character, formed by local cultural identity, socio-political patterns and economic factors.

Gulf cities maintain a certain physical and social environment, where the traditional urban fabric differs from one city to another; such as the differences between Riyadh and Muharraq or Doha in Qatar. To examine the Arabian Gulf cities' traditional urban structure and the role of the Friday mosque in the urbanisation process, an analytical approach is taken to generate an understanding of the forces that have shaped the morphology of the mosque's social identity. These forces are discussed in this chapter, applying the analytical approach to two models of Friday mosques in two Gulf cities which were constructed in the period 1900-1913:

a) Seyadi Mosque in Muharraq, Bahrain (1900);

b) Al Qubib Mosque in Doha, Qatar (1913).

4.4.1 The urban and social structure of the Arabian Gulf in the pre-oil era

The social structure of the Arabian Gulf states is based on tribalism. The foundation and establishment of all the states was heavily dependent on political and military support from the Arabian tribes and trading families. 'The pre-oil sheikhdoms were small scale in terms of their economic military, political and demographic resources. They were a type of strong chiefdom, similar to what Ernest Gellner (1995: 184) calls "tribal proto-states"' (Onley and Khalaf, 2006, p. 191). In the pre-oil era, between the seventeenth and eighteenth century of Arabian Gulf history, what later became known as cities, such as Doha, Kuwait and Riyadh, can be described as concentrated settlements or clusters of quarters, in contrast to the 'city' which implies a larger inhabited area. 'An urban society is simply a society with cities. That is, it has places

that are the physical settings for urban activities, practices, experiences, and functions' (Cowgill, 2004, p. 527).

The Bedouin lifestyle of continued travel throughout the lands of Arabia due to tribal wars and to search for natural resources, led to the creation of small communities of dwellings around a well or oasis. Over time, small units of social inhabitation transformed into villages and eventually evolved, with the oil revenues of the 1940s and 1950s, into towns and cities. These settlements were created around political authorities, as alliances were made between tribes and rulers; a social system that was founded in Najd in the village of Al-Diriyya`h, the first Al-Saud family state. St.John Philby (1920) describes his visit to Al-Hafouf city of Al-Ahsa'a in the eastern province of Saudi Arabia, when it was under Al-Saud domination:

> The town is divided into three quarters, occupied respectively by the artisans, the merchants, and the professional class, the last named being congregated in the citadel, which is a self-contained town occupying the north-western portion of the city, and divided from it by high clay walls of great thickness and strength.… The great white dome and graceful minaret of Ibrahim Basha Mosque, combining the salient features of Byzantine and Saracen architecture, stand out as the most beautiful specimens of art in all central and eastern Arabia, and are strangely out of place in the midst of a people to whom decorative beauty is anathema.

However, the Gulf cities have a distinct culture that differs from the others labelled 'Islamic cities', such as Damascus, Bagdad and Cairo, in terms of their historical urban structure, traditional patterns of the built environment and socio-political factors. Nevertheless, commonality exists with these cities, as expressed in the formal visual structure which applies to the term 'Islamic city', that is the five components which shape the morphology of the traditional Islamic city; the ruler's palace; the Friday mosque; bayt (the residential house); the market or 'souq'; and the plaza or 'saha'.

For the purpose of this study, it is essential to understand the underlying forces which shape the cultural identity of the Arabian Gulf region. This requires an analysis of the urban structure of the historical cities in the Arabian Gulf with an emphasis on the Friday mosque's contribution to the integration process within the various traditional settlements in the region. As noted, this approach is applied to two case studies of Friday mosques, Seyadi Mosque in Muharraq, Bahrain and Al Qubib Mosque in Doha, Qatar.

4.4.2 The socio-spatial identity of historic mosques of the Arabian Gulf

The mosque as a building, it is known historically, has not only been used for conducting the five times a day prayers, but is also a place that has an educational purpose and social importance. This extended role of the mosque is perceived to be part of the faith or *Eman*, which in Islam's teachings has a close link to the core of worship, indicated by the first verse of the Quran the Prophet received from God by Archangel Gabriel: 'Read in the name of your Lord who created' (Quran, Su. 96:1).

The mosque, as an entity, accommodates the principles of faith by demonstrating the three pillars which create the mosque's spatial identity; worship, learning and the social solidarity principle. 'The role of the mosque, the Madrasa and other institutions as well as patterns of behaviour are rooted in Islam's Fiqh' (Ardalan and Bakhtiar, 2000, p.20). This trilogy of functions is also seen in the Arabian Gulf pre-oil mosques. An example of the educational function is in the mosque's courtyard where Quranic classes are hosted by the mutwa'a or the imam. This simple educational organisation, known as the kuttab, established the education system in the Gulf and acts as an elementary school where young boys aged between seven and fifteen gather and sit in lines on the ground on a matt made of palms, called haseerah, facing the muttwa'a who sometimes uses a wooden board and charcoal as tools for teaching.

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4.4.3 The urban traditional Gulf city: underlying forces and the Friday mosque

The process of settlement is governed by internal and external forces. These forces have a direct impact on socio-political aspects, socio-spatial identity and, thus, the morphology of the urban fabric of Arabian Gulf cities.

a) *Internal forces:* tribal domination over an area or part of a city, trading routes and accessibility to the coast or to the central market, linear settlements along the coast constructed by trading families, and the ruler's gifted lands for families or tribes in order to build their settlements.

b) *External forces:* the natural environment, the harsh climate conditions and the scarcity of natural resources and skilled craftsmen.

The social and religious significance of the mosque makes it the most important among all building types. The integration of settlement elements, such as the market, the ruler's palace, the houses, the saha and paths, have created a specific character for each city according to its location, geographical nature and culture. However, the Gulf region, within its territorial boundaries, presents one of the Arab locales that have shaped compositional diversity. While the cities of Muharraq, Kuwait and Doha share the same urban fabric components, they differ in their rates of urbanisation and architectural development. 'Arab towns, despite their regional affiliations, are unique in part as a consequence of local natural variations. Dissonance does not imply discord, but rather, it is "diversity within unity" or "unity within diversity"' (Waly, 1990, p. 9).

The congregational mosque historically acts as a social unit associated with individuals and society, and has a fairly tight relationship with the urban scene, playing a role in the orientation of the townscape's structure and the setting's conditions. This can be seen in the way John Yarwood (2004, p.12) describes the condition in his book about Muharraq: 'There are so many

mosques that their orientation has an impact on the closely-packed courtyard house forms and by extension, upon the direction of the alleys'.

The most striking example of this urbanism in Gulf cities in in Doha in the State of Qatar, in the unknown mosque shown in (Figure 4.11), built in the 1940s on the edge of the coastline. The mosque, in the foreground of the picture, is the dominating feature of the urban fabric, with its simple design that follows the Wahhabism tradition, seen from the absence of a dome and the corner location of the minaret. The photograph shows how the orientation of the urban settlement follows the mosque's qibla orientation, through the structured arrangement of the settlements behind.

Figure 4.11: Mosque on the coast of Doha, Qatar in the 1940s. Source: (http://catnaps.org/islamic/Gulfarch7.html).

4.4.4 Muharraq: The urban settlements and the Friday mosque

Muharraq village is located on the island of Muharraq, which is the third largest island on the Bahrain archipelago (see Map 4.12). Muharraq town was the capital of Bahrain from 1810 to 1923 and the largest of the ten zones that shaped the island area: Al Muharraq, Al Dair, Hidd, Galali, Halat Nuaim, Arad, Halat Seltah, Samaheej, Busaiteen and Halat Bu Maher (see Map 4.13).

Map 4.12: Political map of Bahrain. Source: (http://www.mapsofworld.com/bahrain/).

Muharraq is one of the oldest traditional cities remaining in the Arabian Gulf and has an important place in the Gulf's trading history, acting as a connecting port from Mesopotamia to the east coast of Africa, Persia and India for many centuries (Figure 4.14). It dates back to the civilization of Dilmun and had been subject to many empires and colonial domination, including the Babylonian Empire the Ummayad caliphs of Syria, the Abbasid caliphs of Baghdad, Persian, Omani and Portuguese forces at various times from the 7th century until the Al Khalifa family's rule in Bahrain in the eighteenth century.

Figure 4.13: Tribal Frjan's boundaries on Muharraq Island. Source: (The Ministry of Housing in Bahrain).

In the 1830's, the Al Khalifa family signed the first of many treaties establishing Bahrain as a British protectorate (The World Fact Book, 2012). Muharraq is an island known historically

for trading in pearls and was the capital, 'until the arrival of the British who developed Manama at the expense of the old town around 1920' (Fuccaro, 2000, p. 57).
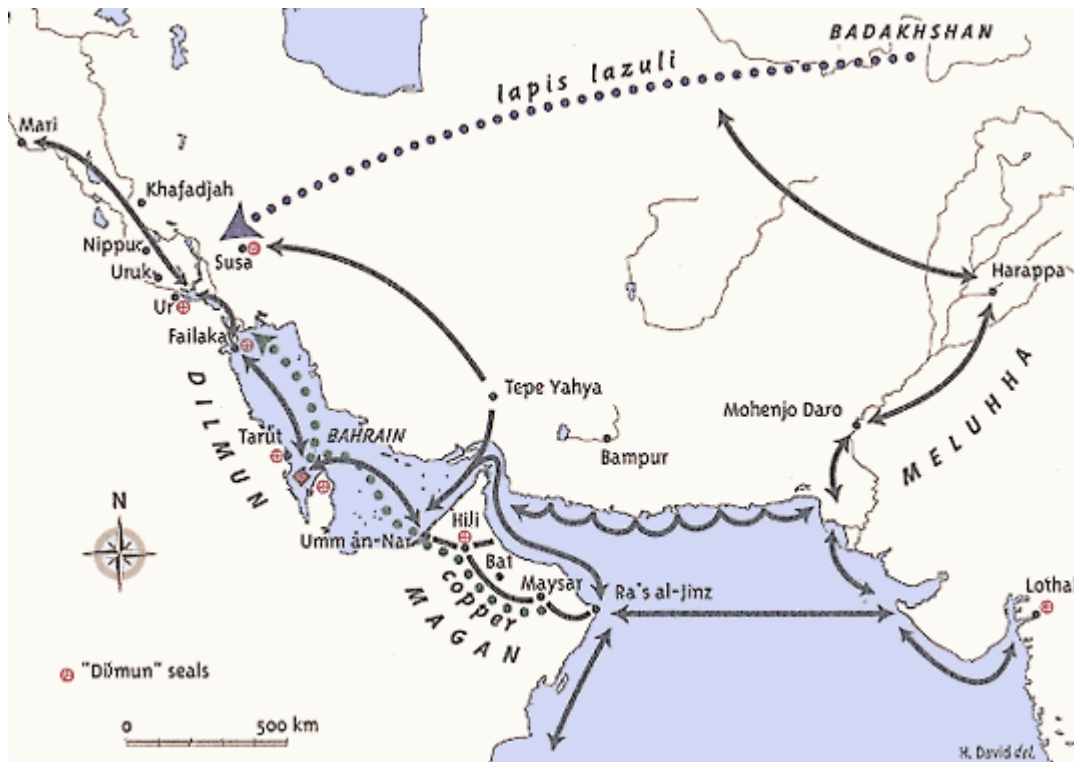
Map 4.14: The strategic location of Bahrain on the ancient trade routes between the Far East, the Middle East and the west. Source: (Casson, 1989).

The urban fabric of Muharraq is a mirror of the socio-spatial structure, whereby the tribes are grouped in quarters, or freej, in a compact structure of residential houses and public spaces interwoven by a network of roads and alleyways known as darb. The roads act as boundaries of the city and link the northern part of the island to the southern areas. The souq, on the other hand, was formed with a linear structure along the western costal side of the island where the process of loading and unloading the merchandise from boats took place. Nearby are the *areesh* and shop units owned by the trading families, for example Al-Mussallam and Al-Jalahma. The traditional souq of Muharraq was a landmark of the town's urban structure. The two main souq or markets are Al-Qaiysaryah souq and Al-Kharo souq, the latter located near the Isa bin Ali

Mosque and known for trading local and imported merchandise, such as date palms, fabrics and camels.

In addition to the ruler's palaces, the Friday mosque is the main focal point of the townscape. According to Al-Wali (1990), there are 42 masjed scattered over the frjan which acted as social community centres, where people gathered five times a day for prayers. There were only two Friday mosques which were built at the core of the island adjacent to the ruler's palaces: a) Sheikh Isa Bin Ali Al-Khalifa Friday mosque, built in 1870; and b) Sheikh Hamad Bin Isa Friday mosque also known as the southern Jmai'a, which has been demolished (Figure 4.15).

Many smaller scale mosques, masjed, were built over the tribal quarters of Muharraq and on the coastal area, outwards from the centre of the islands. These mosques have not constantly served as Friday mosques, as the Friday speech, the main ritual of the Friday prayer sermon, is dependent on the availability of a qualified imam. However, other controlling socio-political factors of the Friday mosque that have regulated the design of the mosque are categorised in the following section.

4.4.4.1 The regulating principles of Muharraq Friday mosque

a) Political conditions

The Friday mosque is a social phenomenon, moulded by physical and religious factors. In the case of the historic city of Muharraq, the location of the mosque is an expression of identity, as in the tribal freej, or a reflection of political stability, as it was built in a centralised location of the city in order to demonstrate the power of the political authority. In his study '*Al Muharraq architecture of a traditional Arabian town in Bahrain*', Yarwood (2001. p. 14) describes the Friday mosque in the traditional urban settlements of Muharraq, saying, 'the Al-Khalifa family built their own palaces throughout the nineteenth century as well as the two

major mosques on the highest ground in the centre of the urban area'. These are the mosques of Sheikh Isa Bin Ali and Sheikh Hamad (Figure 4.16a, 4.16b).
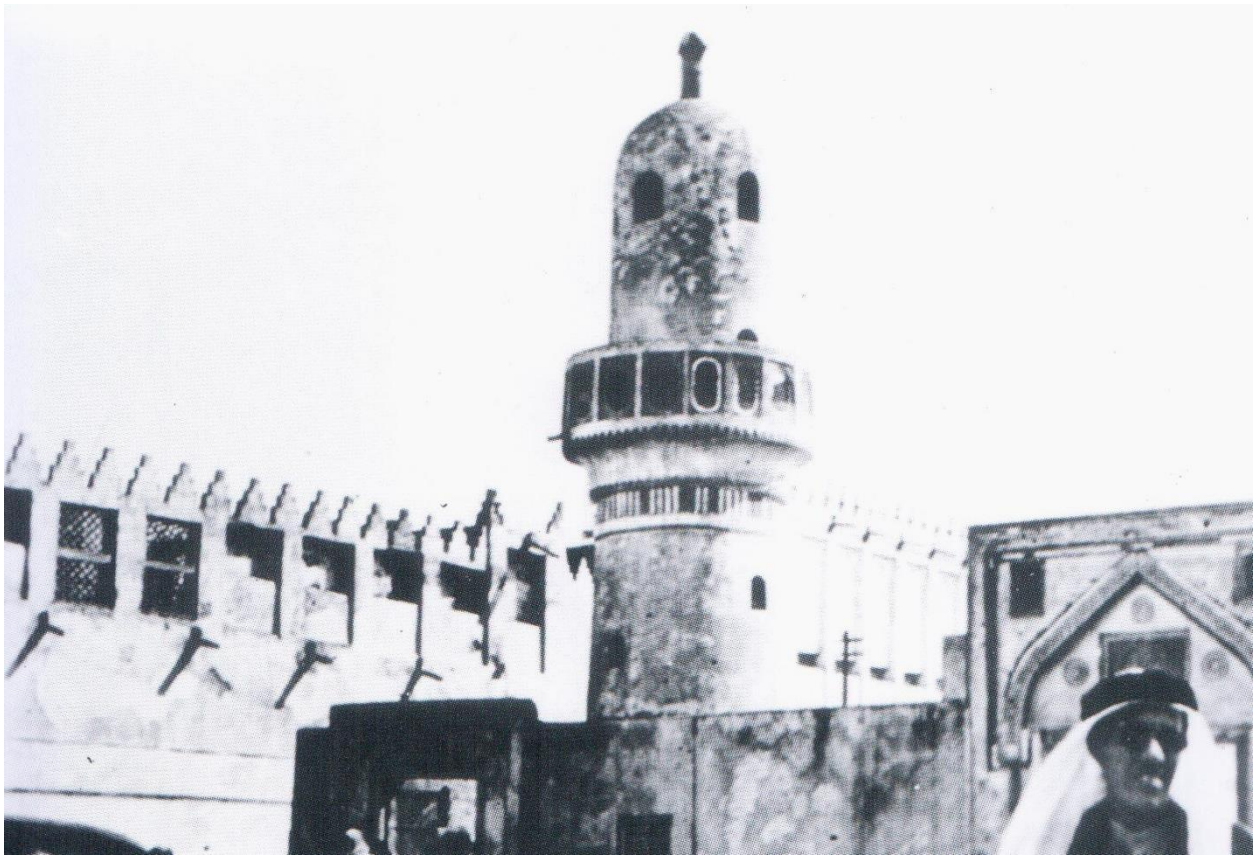
Figure 4.15: Sheikh Hamed Bin Isa's Friday mosque in the 1930s: the ruler's palace can be seen at the back of the house. Source: (Aljowder, 2003, p. 108).
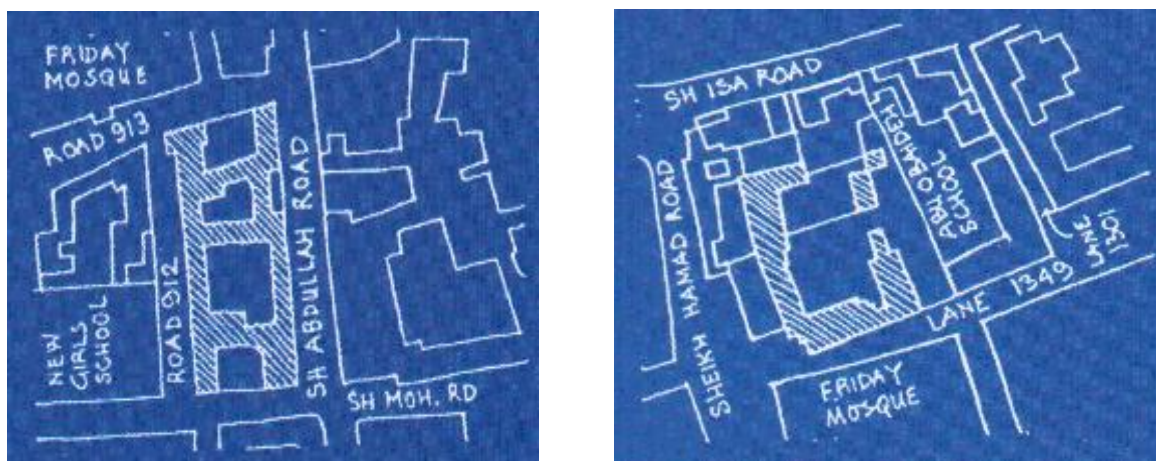
Figure 4.16a: To the right is Sheikh Isa Bin Ali's mosque. Figure 4.16b: The mosque of Sheikh Hamed Bin Isa, showing the locations of the Friday mosques adjacent to the ruler's palaces.

b) The social patterns: freej spatial characteristics

The social infrastructure of Muharraq is defined by the urban settlements, and the distribution of tribes over the quarters was the main characteristic of Muharraq's urban planning. There are nineteen quarters inhabited by the Arab Sunni tribes descended from Najd and Qatar, in addition to the Arabian tribes from the Persian coast with the exception of the freej Al-Hayaj and part of station's freej, which were both Shiite tribes. In a broader context, Palgrave (1960, p. 102). describes the social structure of Bahrain:

> 'In term of religion, the co-existence of the two main branches of Islam Shi'a and Sunni may blur the
> real social mosaic that makes up the city and the Qatifis Shi'a are represented by several distinct groups;
> the Bahrana, the local people speaking Arabic; the Ajam; the Persian; the Hasawis'.

His description of the social structure of Bahrain is general but, in contrast to Muharraq, Al-Manama seems to be majority Shiites. Such diversity, however, in religious and ethnic groups, has an impact on socio-political factors, and, more importantly, on the mosque as a social organisation.

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Until the municipalities were founded in 1927, these quarters or frjan were planned according to the tribes' desires, with no reference to structured planning regulations or codes, which resulted in the interlocking of entities connected by the network of darb with undefined boundaries between the quarters. The pedestrian circulation paths become narrower inwards towards the freej and get wider away from the freej towards the island's coastline. However, the Friday mosque at the freej serves as a social and cultural centre which suggests the tribes' sense of belonging or ownership of land.

   c)   The number of congregational mosques in a city

In my interview with Dr. Al-Sulaiti, undersecretary of the Ministry of Culture in Bahrain, he described an incident which occurred in the 1940s, at a time when Sheikh Salman Bin Hamad, who ruled Bahrain between 1942 and 1961, found the need to build a new Friday mosque in addition to the existing one. There were two reasons for this, firstly, the long walking distance for people to reach the Friday mosque in Manama, and secondly, the need for space in the Friday mosque to accommodate the growing number of worshippers.

The building of another Friday mosque turned to a controversial situation as Al-A'amah (imams) argued that building a second Friday mosque was not needed. They claimed the exiting mosque was sufficient to accommodate the worshippers, and it might have an effect on the unity of the minority Sunni community in Manama. Eventually, the sheikh requested a *fatwa* from the Al-Azhar Islamic complex in order to build a second Friday mosque. The Grand Imam of al-Azhar replied with an approval, and a second Friday mosque was built.

This story addresses the social notion of the Friday mosque in Bahrain, in terms of the relationship between society and the mosque as a social entity that reflects their unity; not only as a Sunni community, but also as policy makers who are part of the 'decision-making' process. The decision to build the Friday mosque was made on a hierarchal basis with the involvement

of the public and high ranking religious and political authorities. However, the following case study of Seyadi Mosque in Muharraq provides a clear image of the social and spatial characteristics of Bahrain's historical Friday mosques.

4.4.4.2 Seyadi Mosque in Muharraq: analysis of the spatial layout

Named after the famous pearl trader of Muharraq, Ahmed Seyadi, the Seyadi Mosque was built adjacent to Seyadi's house; located at the freej in Halat Al-Naiem at a central location of Muharraq town. It covers a total area of 366 square meters and accommodates 200 worshippers. The mosque follows the design of the house, where the facade is articulated with plasterwork motifs resembling a mixture of Persian and Bahraini styles of architecture (Figure 4.17). The mosque has a round-topped minaret, with no balconies, and a height of ten meters. The mosque has three boundary walls with the fourth attached to the main house.

Figure 4.17: The Seyadi Mosque in Muharraq (2012). Source: (photo by the author).

The Seyadi Mosque is designed with a simple rectangular plan accommodating the musalla, roofed area, with an open courtyard in the front and one entrance to the east that opens onto the narrow roads of the freej. The position of the ten-meter-high, round-topped minaret at the corner of the complex of the mosque, at the interaction of the roads, makes the minaret a visual identification of the mosque to the surroundings area. The absence of a dome is noted, as is the women's prayer hall.

The Seyadi Mosque's design shares a similarity with mosques built in the same period in Doha, for example, the mosques of Al-Rawoyis and Al-Ahmed (Figures 4.18a and 4.18b). Specifically, the shape of the slender pointed minaret and the shaded riwaq are attached to the roofed musalla room and open onto the courtyard. However, with the exception of the minaret, the design of these mosques follows the traditional Arabian hypostyle that originated from the Prophet's (PBUH) Mosque in Madinah, where simplicity is the dominating factor in the design, expressed through two architectural elements, the open courtyard and the single riwaq attached

to a roofed musalla area. Furthermore, the low boundary wall with the entrance door at the centre marks the mosque's territory within its surroundings.
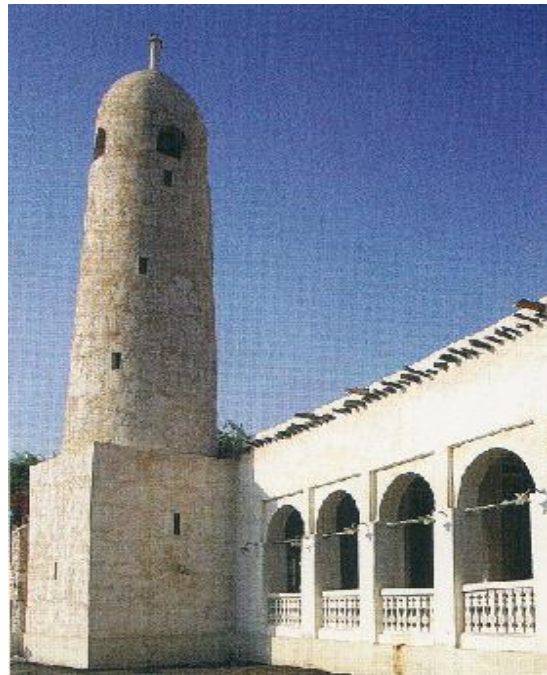
Figure 4.18a (to the left): The minaret of Al-Rawoyis Mosque in Doha, built in 1915. Figure 4.18b: The minaret of Al-Ahmed Mosque built in 1964. Source: (Ramadan, 2009, p. 14).

The important spatial characteristic of the Seyadi Mosque is the shaded riwaq, defined by eight wooden columns that can be interpreted as a dividing space and act as a spatial transition from the outside world, represented by the courtyard and the boundary wall, to the sanctity of the musalla space (Figure 4.19).
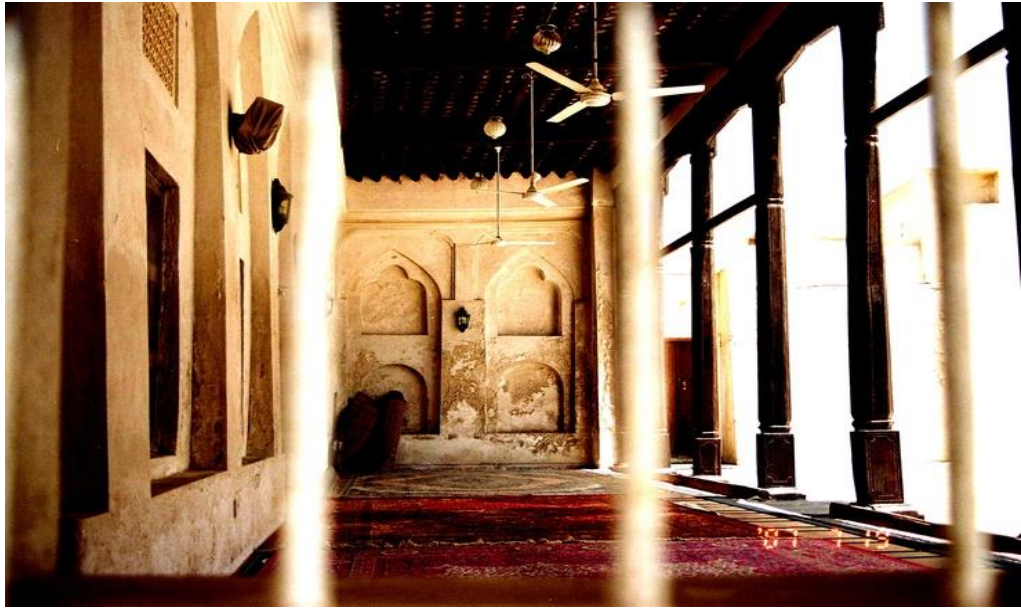
Figure 4.19: The shaded riwaq at the Seyadi Mosque (2012). Source: (photo by the author).

4.5 Historical background of Qatari urban structure

The aim of this section is to investigate the historical mosques of the state of Qatar, with an emphasis on the historical Friday mosque, by providing an analytical perspective on the pre-oil period mosques of the traditional urbanism of Doha, the capital of the state of Qatar. The peninsula island is located on the north-west coast of the Arabian Gulf and shares a land border of sixty kilometres with the Arabian Peninsula. The rest of the peninsula is surrounded by the Arabian Gulf.

Similar to the Arabian Gulf states, as with Bahrain and Kuwait, the state of Qatar shares their socio-cultural, traditional and urban morphology. The general characteristics of the urban fabric of Qatar do not differ from the cities of Muharraq and Kuwait in terms of the urban environment and architectural language (Al-Buainain, 1999). The spatial features of Friday mosques show more similarity than diversity within the timeframe of the eighteenth and nineteenth centuries. In order to grasp this point, an analytical approach, as mentioned earlier in this chapter, is applied to the historical Friday mosque of Al Qubib, built in Doha in 1878, with aim of identifying the spatial characteristics of pre-oil period mosques in the city. A brief

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examination of the urban settlement generates an understanding of the Friday mosque's role in shaping the urban structure of Doha city.

4.5.1 The pre-oil urban settlements in Doha, Qatar

Qatar, is composed of ten administrative areas (see Map 4.20). It appears that the peninsula saw urban settlement at the time of the early waves of Arabs tribes' immigration in the eighteenth century (Salama, Wiedmann and Thierstein, 2012, pp. 35-61). These tribes descended from the Arabian Peninsula, along with groups of Persian immigrants who settled at the northern and eastern coastlines into a few small towns, such as Al Huwailah, Al Wakra, Fuwairit, Zubarah and Doha. Doha is historically known as Al Bidaa, founded in 1825 as the principal town of Al-Thani, the ruling family of Qatar (Adham, 2008, p. 221).

The location of these concentrated nomadic communities was the result of socio-economic factors including: a) the accessibility of water sources; b) the dependency on pearl diving and fishing as the main trading activities that provided vital income; and c) the ruler's land distribution to the tribes (Al-Buainain, 1999). The internal political stability, social circumstances and environmental conditions controlled people's movement across the peninsula (Al Khayat, 1988).
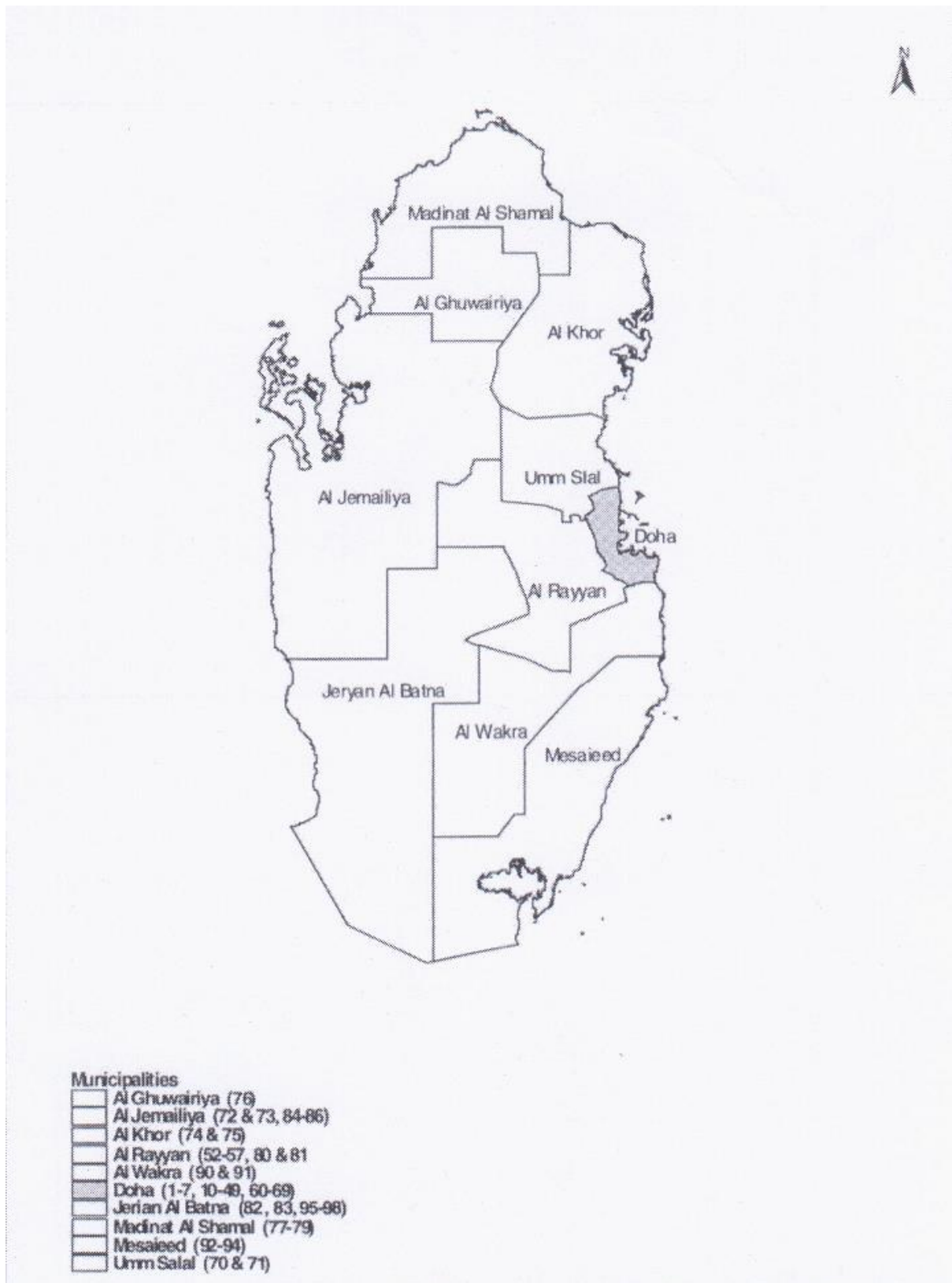
Map 4.20: The administrative divisions of Qatar. Source: (Qatar Centre for Geographic Information System).

The most important pre-oil settlement for the urban fabric of Doha was the market, which stretched over the coast and inward to the centre of the town. It is known as Souq Al Jasrah and surrounded by frjan or quarters, mainly inhabited by Arabs and Persians and directly linked by roads to the market. The centre of Doha town is marked by the ruler's palace and the Friday mosque. Apparently, the central location of the Friday mosque acted as a focal point in the urban structure when the residential quarters were distributed based on a planning system that accommodated the various social groups, which emphasises the social importance of the mosque. All the groups gathered once a week for the Friday prayer at the grand Friday mosque, in this case Al Qubib mosque.

4.5.2 Al Qubib Friday mosque

In 1878, Sheikh Jassim Bin Mohammed Al Thani, the founder of modern Qatar, built the state's Friday mosque and named it Al Qubib. The design and the name were inspired by a mosque that Sheikh Jassim saw in the Al Zubarah area, on the northern coast of the peninsula. The Al Qubib mosque was built at the shorefront of Doha town and designed by an architect named al-Halimy, who planned the mosque to be twice the size of the original in Zubarah, which had been demolished (Figure 4.21).

Figure 4.21: An old photograph of the Al Qubib mosque. Source: (Ramadan, 2009).

The architectural features of the mosque are considered to be the first to show the Qatari architectural style (Ramadan, 2009, p. 34). The main characteristics of Al Qubib mosque are the forty-four domes incorporated over the rectangular plan of the prayer hall, which open to the courtyard through a single arched riwaq supported by slender columns. To the east side of the mosque, a small building accommodating the ablution facilities and other buildings had been erected by time the majlas (male setting hall) was built to the west of the mosque.

The mosque has one mihrab built in the qibla wall and projecting from the outside as a semi-curved dome. To the east side of the mihrab there are eight window openings, making sixteen windows in total. The first window to the left of the mihrab has been turned into a door for the imam to use as an entrance to the prayer hall. The mosque has two main entrances, one at the northern side and one to the southern side. The location of these entrances indicates the design tendency to link the surrounding building clusters with direct access to the mosque. However, the courtyard area in the mosque complex is the main element of the mosque's architectural composition as it dominates the design of the mosque by its position at the centre, with three buildings attached to its confined space.

The majlas building near the mosque is a reflection of the socio-spatial importance of the mosque, where people gather for various occasions, especially after Friday prayers. This social behaviour is common for Arabian tribal Gulf communities, and continues to the present time.

4.6 Conclusion

This chapter's aim is to provide the context and discourse, supported by case studies, through which to understand the spatial characteristics of historic mosques in the Arabian Gulf region. It firstly defines the mosque as an Islamic building, exploring its variations in typology throughout the Islamic region, seeing design as a product of existing culture, partly influenced by other cultures. A base ground has been established, firstly by analysing the components of

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mosque architecture and its spiritual meanings and historical progress in general terms, and secondly by exploring each component of historic Gulf mosques and finding the similarities and differences that give them their distinct morphology (Figures 4.22a, 4.22b, 4,22c).

Historically, Friday mosques in the Arabian Gulf were simply designed, with very little decoration and on a smaller scale than those built in present times. This is due to the smaller scale of societies in the villages and settlements of the region in the past. Religious laws and guidelines control the principles of mosque design, with the majority in the Arabian Gulf being Sunnis, whose mosque design concepts stem from the Prophet's (PBUH) Mosque with its enclosed courtyard and without a dome. However, the evolving design of the mosque in the Arabian Gulf cities, in which the dome has become a main element, serves as evidence of the changing morphology of mosque architecture, reflecting the changing society as a result of economic development.

To conclude, one can see that the characteristics of the pre-oil settlements of Doha are, to some extent, similar to those of the cities of Muharraq and Kuwait, where the market, the ruler's palace, the Friday mosque and the residential quarters, or freej, are the main urban elements.
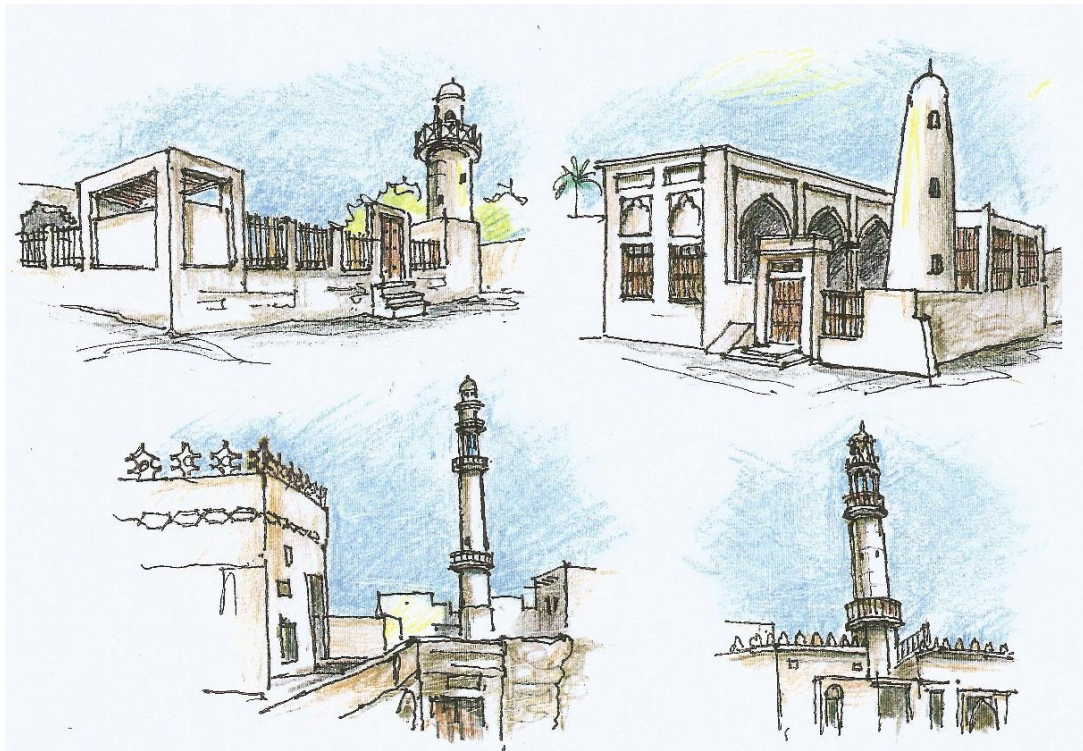
Figure 4.22a: The typology of the historical Friday mosque in Bahrain. Source: (drawings by the author).
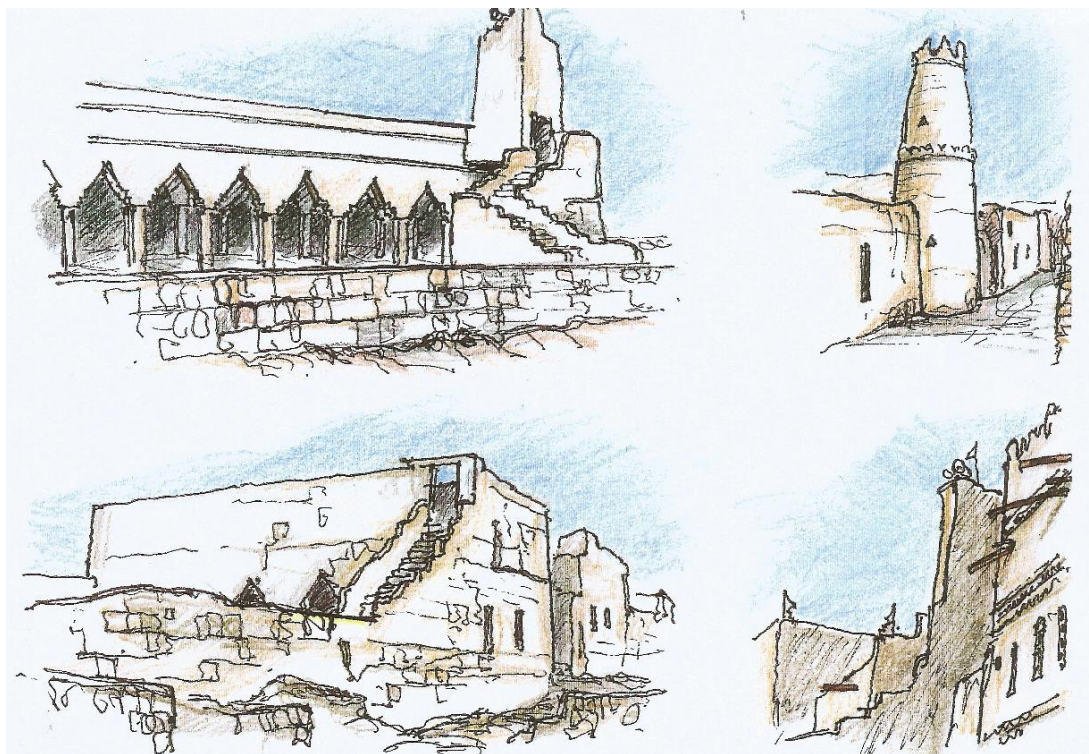
Figure 4. 22b: The typology of the historical Friday mosque in Najd. Source: (ibid).
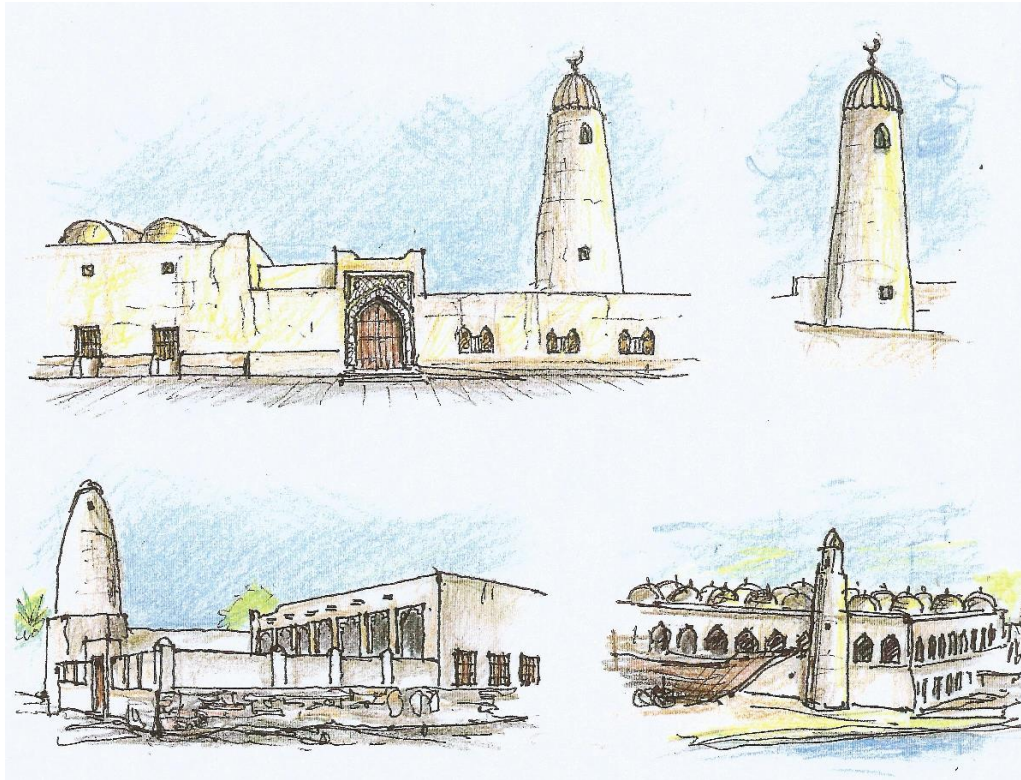
Figure 4.22c: The typology of the historical Friday mosque in Doha. Source: (ibid).
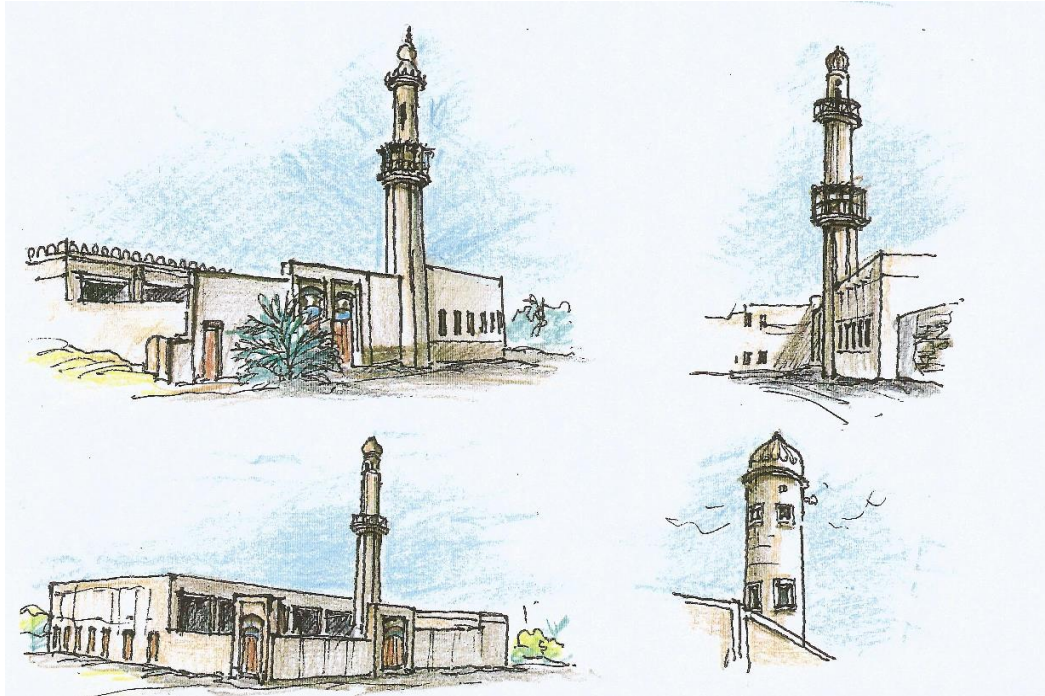
Figure 4.22d: The typology of the historical Friday mosque in Kuwait. Source: (ibid).

CHAPTER FIVE

CRITICAL REGIONALISM: THE STATE MOSQUE ARCHITECTURE AND ITS SPATIAL LANGUAGE

5.1 Introduction

This chapter examines the various aspects of the socio-cultural identity and economic changes which the Arabian Gulf has gone through since the discovery of oil in the region in the 1930s. This discovery produced a new environment that has shifted the location and scale of the traditional Friday Mosque from the quarter to a larger scale State Mosque, reflecting the transformations in the socio-political status of the Gulf countries. In order to examine these changes, we performed an investigation based on two parameters: the social-economic context and the social-political factors.

Nader Ardalan's research on the built environment of the Arabian Gulf countries has engaged with cross-disciplinary studies of the cultural identity, sustainability, urbanism, environmental, social and economic aspects of the region. In his study, '*Sustainable identity: new paradigms for the Persian Gulf'* (2013, p. 329–346), Ardalan investigated the outcomes of the economic developments that Gulf countries have experienced on the levels of cultural identity and environmental sustainability. One of Ardalan's main questions in his research regarding cultural identity, with specific reference to the six Arabian Gulf countries of Bahrain, Saudi Arabia, Qatar, Kuwait, the United Arab Emirates and Oman, is: 'do the new developments exhibit a particular cultural character and narrative and what role does globalisation play in this narrative?' (ibid, p. 330).

He addressed this question by highlighting the globalisation of architecture as evident in the Gulf countries: 'looking at the urban forms and architecture being built there today, the predominant models that have been followed seems to be those of Los Angeles and Las Vegas with regard to contemporary urban patterns and zany avant-garde architecture' (p.342).

In his essay '*Towards sustainable urbanism in the Persian Gulf: Analysis of the past*', Ardalan (2014, p. 171–186), investigated ten maritime cities on the west and east coast of the Gulf, which includes cities in Oman, the United Arab Emirates, Qatar, Bahrain, Saudi Arabia and Kuwait. In this study, Ardalan demonstrated how the economic development on the built environment resulted in 'a serious long-term retrogressive and destructive ecological and socio-cultural impacts on both land and sea' (ibid, p. 171). He further explained that the rapid urbanisation in the Gulf cities, fuelled by the financial gain, has created an identity crisis, where these 'gains have also come with the loss of a sense of identity and of the working knowledge of living sustainably in the context of the natural environment and indigenous cultures of the Persian Gulf region' (ibid, p. 172).

Following the discovery of oil in the 1930s and 1940s in the Arabian Gulf region, the economic revolution reached its peak in the mid-1970s, resulting in a dramatic transformation in the established environment and the socio-cultural fabric. These changes were accelerated as a result of the vision of the young Arabian Gulf governments of that time, in their desire to modernise the cities of the Gulf and to visibly move forward from pre-state establishments to create new national identities.

In the process of modernising the Gulf countries, however, architectural identity was an issue that became crucial. There were differing schools of thought on how to effectively forge a new architectural identity in the region. On the one hand, there were traditionalists, who resisted change, arguing that architects and planners should consider the traditional and social

preferences when planning the new cities, as opposed to a move towards architectural 'globalism', which they viewed as a break from pre-existing traditional themes of design. On the other hand, there were those belonging to the modernist school, as represented by the government authorities and oil companies. Western and Arab architects/consultants and planners tended to discard the traditional trends and were more open to the new westernised architecture that brought a new system of building and new materials of construction replacing the mud bricks and palm columns with cement blocks, reinforced concrete, glass and steel. The focus was on the new construction technology and materials, when it should arguably have been on the revitalisation of the past, in order to maintain continuity with the Arabian Gulf countries' traditional architecture value and identity.

Some new development plans have however shown a more critical regionalist approach in laying special emphasis on the construction of State Mosques, in developing a specific regional character. For instance, during the 1980s, The Riyadh Development Authority invited the Jordanian architect Rasem Badran, to design the Grand Mosque of Riyadh, also known as the Qasr Al-Hukm Mosque; in his design, Badran revitalised the traditional *Najdi* Mosque by not only using formalistic adaptations of *Najdi* traditional architecture, but also by incorporating the essential programmatic requirements that suit a contemporary mosque. Badran's contemporary-regionalist approach in this project is discussed in depth in chapter seven as a case study.

In 1977, the Iraqi architect Mohamed Saleh Makiya was commissioned to design the State Mosque of Kuwait, but his design of the mosque was described by Kuwaitis as 'too Iraqi or Persian in character' (Makiya, 1990, p.59). In defence of his father's work, Kenan Makiya argued that there was no monumental Kuwaiti tradition which can be used as an architectural reference point to draw upon for Kuwait State Mosque. His point of view seems to dismiss the local traditional architecture of the Friday Mosque of Kuwait, and can be seen to confirm the

architect's adaptation of Persian-Iraqi architectural models. (Chapter eight is dedicated to investigating Mohamed Makiya's architectural language, by analysing the State Mosque of Kuwait as a case study).

In contrast, the Egyptian architect Abdul Wahid El-Wakil, who designed and supervised the building of more than fifteen mosques in the cities of Jeddah and Riyadh of Saudi Arabia, and in the city of Manama in Bahrain, had a different approach. El-Wakil has been described by Mohammed Al-Asad as 'a revivalist of tradition' (1992, p.34); whereas all of his mosques differ in size and formal composition, they similarly express diversity in prototypes of the Islamic world's architectural heritage. Al-Asad (1989, p.1) stated that El-Wakil's mosque architectural vocabularies 'all draw heavily, and often very directly' on the prototypes belonging to many Islamic cultures, 'including those of Tulunids, Mamluks, Ottomans, as well as the vernacular rural architecture of Egypt, the architecture of Islamic Iran, and the Saudi architecture of Saudi regions of Najd and the Hejaz' (ibid, p.1).

In the next chapter, four of El-Wakil's mosques are examined as sub-case studies, which include the Island Mosque, the Corniche Mosque, the Binladen Mosque, and the Al-Ruwais Mosque, which are all located in the city of Jeddah. The analysis of these mosques is conducted in comparison to the Yateem Mosque in the city of Manama.

The three architects mentioned above have all contributed to the development of newer and more formal architectural languages of the Friday Mosque in the Arabian Gulf cities (Table 5.1)

Formal language	Architect's Name & Year of Construction Completion	Image
Traditional-Contemporary	Abdul Wahid El Wakil -1992	
Contemporary - Regionalist	Rasem Badran -1992	
Classic-Modernist	Mohamed Makiya -1985	
Traditional-Modernist	Ibrahim Aljidah -2011	

Table 5.1: The different architectural languages of the Friday Mosque in cities of the Arabian Gulf.

The chapter starts with a discussion on the issue of cultural identity, by providing an example of the early settlements of modern residential units at the eastern coast of Saudi Arabia. A further discussion follows, on the outcomes of this rapid urbanisation on the environment of the Arabian Gulf countries. Furthermore, the chapter aims to answer the question of how the Friday Mosque responded to the challenges with regard to its architectural identity and its socio-political aspects. In order to address these issues, an analysis is applied to the mosque of Mohammed bin Abdul Wahhab; the State Mosque of Qatar in the city of Doha.

5.2 The socio-economic context: towards regionalism

The wealth that oil brought the Arabian Gulf states was invested heavily in planning and building the vast desert lands of the Gulf region. Cities were born at the coast of the Gulf, where the oil and gas companies were stationed with their western senior staffs, in addition to the many local employees. However, with such fast-paced developments, and with the arrival of western consultants and planners (which the Arabian Gulf governments invited in order to plan the new emerging cities), the notion of disappearing 'identity' was the main concern of the inhabitants.

For instance, in the case of the eastern provincial cities of Saudi Arabia in the late 1930s, Aramco (Arabian-American Oil Company) established their settlements (camps) in the city of *Dhahran* and the city of *Ras Tanunurah* (Figure 5.2). They built units of one story houses for their staff, which followed the American south-western style, while the non-attached houses were influenced by the Spanish and American-Indian architecture, and mainly constructed with wood and stone materials, and had one or two story plans. These images were the first interactions between the locals and the western culture, where the local employees resisted the 'new' concept of housing and, more importantly, how these new designs challenged their cultural familiarity with their traditional courtyard houses. In his article, 'Riyadh: A City of

"Institutional" Architecture', Mashary Al-Naim (2008, p. 118) described this situation as follows:

It is possible to argue that this early introduction had a deep but not immediate effect on the local people. It made them question their knowledge and how to react to these developments. In other words, this early change can be seen as the first motive for a social resistance to the new forms and images in the contemporary Saudi environment.

It is true that 'change' can be faced with some resistance; however, this was a situation that needed the Saudi's government intervention, especially when the local employees of Aramco started to build their houses 'over any empty land available and erected basic shelters and fences of locally available material separated from each other by narrow irregular footpaths' (Shiber, 1967, p. 430). These local dwellings, which can be described as indigenous urban settlements, forced the Saudi government to react in order to achieve control over the spreading of these dwellings; therefore, they requested that the Aramco engineers plan the relevant housing projects around the oil areas to host the local employee and their relatives. This was an early example in Saudi Arabia of modernist ideas of urban design overriding indigenous settlement patterns.

With their independence during the 1970s, the Arabian Gulf countries started drifting towards different horizons of architectural and cultural development with rapid economic growth. The need to find an architectural language that epitomised the Arabian Gulf identity was needed, especially a language which reflects the traditional heritage, the socio-cultural values (such as the concept of privacy and the importance of the religious buildings as in the Friday Mosque, in regard to its location), social values and architectural designs.

Saleh Al Hathloul (1998, p. 23) argued in his essay '*Continuity in changing tradition*' that 'the law as a highly-institutionalized form represents a valuable asset, especially in a Muslim

society, where the Sharia'a regulates all aspects of life and provides behavioural rules of conduct.' He continued by emphasising the rule of Sharia'a as the main source of regulations and codes of the built environment in an Islamic city, regulating the physical and social fabric.

However, it could be argued that with the rapid modernisation of the Gulf cities, fuelled by petro-dollars, the traditional trends have declined steadily. For example, the traditional neighbourhood with narrow roads and undefined boundaries, an organic character that was practically evident in old cities of Muharraq, Riyadh, Kuwait and Doha, as discussed in chapter Four, has been replaced with more structured plans of residential plots and roads. Moreover, the courtyard houses have been replaced with more contemporary houses or 'villas' and other buildings lining the streets.
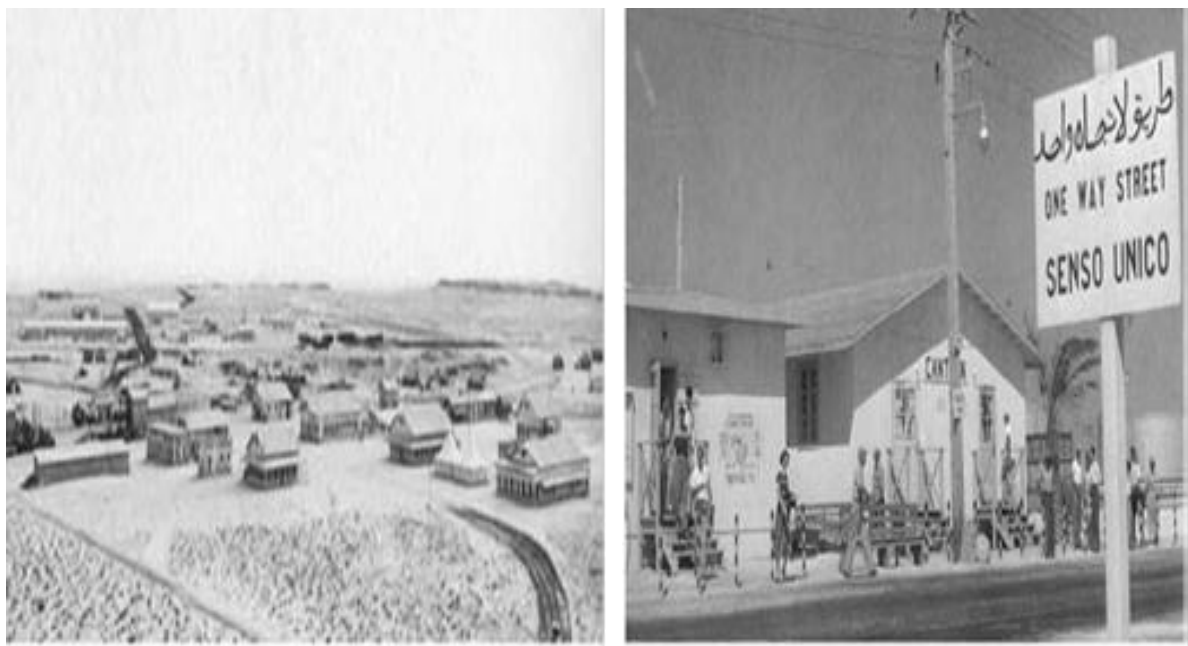
Figure 5.2: The new housing image of Aramco in the 1930s and 1940s. (a) To the left, the early American camp in Dhahran (1930s); (b) American camp in Ras Tanunurah (1950s). Source: (Al-Naim. M. 2008, p. 119).

However, the complex outcomes of the modernist urbanisation approach can be outlined in three main points:

a) **The process of redefining tradition within a modern context:** those architects and planners seeking a regionalist approach and working in post-oil Arabian Gulf countries had to confront the globalism phenomenon 'in a time where modernist architecture was promoted via vehicles such as the post-war CIAM' (Lu, 2011, p. 4). Duanfang Lu indicated the critical conditions that challenged the process of modernising the pre-industrial countries:

> There are two dilemmas in the course of pursuing modernism as developmentalism. First, modernist architecture in many developing nations arose at a time when societies lacked the typical prerequisites for modernism, such as industrialisation and modern construction technologies. The second problem was to find the balance between the specificities of the local context and the homogenising effects of modernist design. (Lu, 2011, p. 11).

This complexity created by such contradiction between the local traditional architecture and the modernist movement is a subject which scholars and researchers have debated over the last few decades. This discourse has led to the emergence of new forms of hybrid structure with pluralistic expressions inspired by a multiplicity of architectural languages. There were concerns of modernism overcoming the traditional architecture of the Gulf region, as Tanis Hinchcliffe (2013, p. 32) stated that, 'even in the 1950s, there was awareness that instant modernisation could wipe out any previous cultural traditions in the Gulf region'. Therefore, the call for rethinking the validation of the western models in the Arabian Gulf countries gained more traction due to two reasons: 'the realization of the socio-cultural inappropriateness of western models and the emergence of Arabic regionalism that demanded design and planning ideas drawn from traditional local cultures' (Alraouf, 2013, p.86–87).

b) **The threat of heritage demolition**: With such excessive urbanisation, many of the historical buildings and sites were either demolished or neglected to be restored to its original condition. 'It is the richest Arab

countries which have lost most of their traditional urban heritage, since the abundance of financial resources and ensuing development pressures have led to wholesale demolition of most of their historic centres' (Bianca, 2000, p. 176).

People who lived in these historical sites were forced to leave their homes in order to replace their lands with roads and/or new buildings, and the Arabian Gulf states started a new system of compensation to fund the original inhabitants in exchange for their lands. This system, called '*Tagieem El Agar*' in Arabic means literally the valuation of the property followed by a compensation procedure, which in Arabic is known as '*Ta'aweed'*.

Notwithstanding these compensation policies, the governments simply furthered the rapid physical transformation and destruction of the traditional buildings; accordingly, they pursued new concepts of globalised urbanism and did not take into account the cultural response to the physical expressions of the newly-built environment, which led to weakened engagement or, at the worst level, to detachment between the user and his space identity. An example of this can be seen by the argument raised by Al-Naim and Mahmud (2007. p.3), that *Hofuf* city, on the eastern coast of Saudi, where the traditional fabric of the city was challenged in a time where traditional courtyard houses were replaced partially with commercial enterprises, had their traditional structure of the neighbourhood or *Freej* destroyed; hence, the traditional socio-economic structure of the society was deconstructed. The authors indicated that 'the social and physical consolidation and continuity of the *frjan* were completely destroyed which resulted in a weakened social and physical homogeneity in the old city' (ibid).

     c) The fascination of the Gulf governments with Western, glossy architectural images was driven by a modernisation agenda, as evident in the statement 'yet many decision makers in Muslim countries still take for granted the "superiority" of the foreign paradigm and neglect to question both the

validity of the imported principles and the alleged obsolescence on their own traditional urban heritage' (Bianca, 2000, p.189).

In light of the previous points, the values embodied in the architectural language of the traditional building was not fully recognised by the governmental authorities and decision makers due to their lack of knowledge of the importance of the traditional heritage at the time, which resulted in the loss of architectural heritage. In this regard, the King noted in a statement that 'the 1970s and 1980s saw an immense loss of Arabian architectural heritage with little attempt to record towns and houses before they were rebuilt' (King, 1998, p.1). This is further supported by the fact that, it was only in 2011 that the Saudi Arabian government create the National Built Heritage Centre, which is a sub-division of the Saudi Commission for Tourism and Antiquities, with the mandate of protecting and promoting the cultural and built heritage of the country. Fortunately, the other Arabian Gulf Countries started their efforts in protecting their heritage earlier, during the end of the last century.

5.3 The urban context of the Friday Mosque: discontinuity from the past?

The ability of the mosque as a building to absorb many different styles embodies the Islamic principle of simplicity in design. In fact, mosque design in its origin permits the flexibility of modifying and altering the architectural forms and components of mosque design, keeping in mind that a mosque does not require a structural building, but simply a space set aside for prayer. Over the centuries, this principle of simplicity enabled architects to design the mosque with a wide range of options and models.

The Friday Mosques were central to the conflict between traditional and modern values and the debates concerning the architectural languages in which these values would be represented – it is further demonstrated in this chapter that Friday Mosque's architecture had also been in a transitional phase. The pre-oil Friday Mosque was seen as a social and religious unit that dominated the urban fabric of the neighbourhood or *Freej*, while in post-oil phase, the Friday

Mosque was positioned and built based on mostly a grid structure of the city's urban planning with less profound social importance, due to the expanded *Freej* area and the rising population numbers.

The pre-oil urban conditions are mostly similar within the old Arabian Gulf cities; the composition of residential quarters *Frjan*; the courtyard Friday Mosque; the centrality of the market place and the connecting paths within the *Freej* and to neighbours' quarters. However, the traditional Friday Mosque that was characterised by a front courtyard and one corner minaret as evident in the coastal cities of Muharraq, Kuwait and Doha is to some extent different from the traditional Friday Mosque found in central Najd, specifically in Riyadh city. In essence, these coastal cities were port cities that were heavily dependent on trading, pearling and fishing; hence, the formation of residential clusters of quarters was at a closer distance to the coast area where the Friday Mosque dominated and directed the orientation of the physical urbanism of the *Freej*.

The modernism discourse in the Arabian Gulf countries has mainly focused on city urban planning and public buildings. In the face of such development, the Friday Mosque architecture went into a transformation phase when the newly independent states started to build State Mosque in the capital cities to replace the old Friday Mosques, such as the Mosque of Qasr Al-Hkoum of Riyadh. However, the traditional Friday Mosque has responded to the modernisation process of the urban environment in three different ways:

a) **The shift in scale from a relatively smaller quarter Friday Mosque to a larger scale**, where the State Mosque is built in the capital city of the country. It was very clear that the increased area of the mosque, the height of minaret, the excessive interior decorations and materials used in the state

mosque aims to represent the stability, wealth and the power of the new state.

b)   Although the architectural identity of the state mosque was to reflect the national identity of each Gulf country, the state mosque of Bahrain was an example of how the architectural language of the mosque is detached from the traditional environment of Bahraini architecture. Al Fateh Grand Mosque in Manama, the capital city of Bahrain (Figure 5.3), was built in 1987, in an area of 6500 square metres, with an accommodation capacity of 7000 worshippers, and was considered one of the largest Friday Mosques in the region at that time. This mosque was constructed with a facade of Italian marble and Indian wooden doors; the central dome was entirely constructed from fibre glass which covers the main prayer hall. The main issue is that, the Al Fateh Grand Mosque's architecture design cannot be confined to a specific typology of mosque architecture; it seems that the initial attempt was to follow an Ottoman architectural design, indicated by the four domes with two square plan minarets that rise to more than 170 square metres and the inner courtyard, surrounded by an arched riwaq. In contrast, the *Seyadi* Mosque in Muharraq, which has been restored to its original design, represents the traditional Bahrain architecture.

c)   As a result of the evolution of the city building in the Arabian Gulf region, the centrality of the Friday Mosque in the *Freej* lost its value. With expanded areas of neighbourhoods that required building more than one Friday Mosque to meet the needs of the rising population, as well as the change in the social patterns as a result of the economic growth, the role of the mosque has shifted to a place for worshipping only, except for the

Islamic centre mosques that provide educational facilities and cultural centres.

Figure 5.3: Al Fateh Grand Mosque in Manama. Source: (photo by the author).

Furthermore, the Mohammed Bin Abdul Wahhab State Mosque of Qatar is examined in detail to provide an understanding of how the post-oil Friday Mosque absorbed the transition in the architectural and formal languages of the new states.

5.4 Mohammed Bin Abdul Wahhab State Mosque of Qatar: a study analysis

Figure 5.4: Mohammed Bin Abdul Wahhab State Mosque of Qatar. Source: (publications of ministry of Islamic affairs of Qatar).

The Mohammed Bin Abdul Wahhab State Mosque of Qatar is examined, in order to describe the transformation of the Friday Mosque in terms of its spatial and formal characteristics and elements. The analysis is based on three categories, which are as follows:

a) The urban context and settings of the mosque.

b) The spatial typology and formal language as in the elements of the minaret, domes, gateways, fountains, riwaq and courtyards.

c) The spatial language of the interior elements, such as the prayer hall, minbar, mihrab, columns and dome as seen from within.

This analysis provides a detailed understanding of the mosque's formal and spatial languages and carries to the following chapters. The analysis aims to generate an understanding of the transformation process of the Friday Mosques, in which the three categories mentioned above are interrelated in forming the mosque's character, as regards its formal and spatial languages.

5.4.1 The urban context and settings of Mohammed Bin Abdul Wahhab Mosque

The mosque is located in the Al Jebailat quarter, in the northern part of Doha (Figure 5.5). The construction of the mosque started at the end of 2008 and opened to the public in 2011. In architectural terms, the mosque was designed by architect Ibrahim Jaidah, and supervised by the private engineering office at the Royal Court of Qatar State. The mosque has a floor area of 20,000 square metres built on land area of 175,000 square metres with an accommodating capacity of ten thousand worshippers.

The urban location of the mosque has an impact on the socio-spatial aspects, as it is surrounded by highways on the south, west and east sides; this situation has led to the prevention of users from the ritualistic way of 'walking to the mosque', as the only accessible way of reaching the mosque is by car. Such urban implications could be prevented from the early stages of the mosque's planning if the socio-political aspects of the Friday mosque were fully valued and understood by the client.

To overcome this problematic aspect of urbanism, shaded pedestrian bridges could be an option, whereby the surrounding presidential quarters can be connected to the mosque. The absence of visitors at the mosque campus, between prayer times, was also noticeable; this may simply be because the mosque as a building is not being integrated in an urbanism context with residential quarters.

5.4.2 The spatial typology and formal language of the mosque

The building structure of the mosque consists of three levels:

a)   The underground level, covering an area of 3,853 square metres which includes car parks, men's ablution facilities, bathrooms and an electrical substation.

b)   The ground level, with an area of 12,117 square metres that includes the mosque's main components: the front and the inner courtyards, the men's prayer hall, arcades (Riwaq), women's ablution area, mihrab and the minbar.

c)   The mezzanine floor includes the women's prayer gallery, library and classrooms for educational purposes with a total area of 2,594 square metres.

As indicated in chapter four, the design of the mosque is inspired by the Al Qubib Mosque, which was first built in 1878 and restored in 2012, as part of redevelopment plans for the Doha central market, known as the Souq Waqif (Figure 5.6). The design of the Qubib Mosque, as mentioned in chapter four, was inspired originally by a historical mosque in Zubarah district, which is located at the northern coast of the peninsula. Also, the shape of the minaret and the design of the domes recall the design of the Qubib Mosque, as the mosque of Mohammed Bin Abdul Wahhab is 'imitating the form and style of the mosque that was until now considered as one of the most exceptional mosques in the state because of its unique type of layout and exclusive method of construction' (Jaidah, 2015. p.23).

Figure 5.5: Location of the Mohammed Bin Abdul Wahhab Mosque in Doha, Qatar. Source: (Fraser and Golzari, 2013, p.111).

Notwithstanding its rather direct expression of aspects of traditional Qatari architectural language (as indicated by the forms of the minaret, the shallow domes, and the mosque's spatial organisation and overall composition), the mosque engages with the social needs of the modern

world with its 'added' facilities such as a library, educational classrooms and a radio broadcasting room/studio. Moreover, there is the use of elevators inside the mosque and escalators at the front yards, to connect the car park area to the ground level. The integration of these spatial elements with the traditionalist language of the design created a unique character of the mosque that blends in harmony, on a visual level, the traditional elements with modern ones.

Figure 5.6: Al Qubib Mosque in Doha restored in 2012. Source: (publications ministry of Islamic affairs of Qatar).

In its vastly enlarged scale, the State Mosque emulates the basic composition of a traditional mosque, such as the Al Qubib, with its rectangular multi-domed prayer hall preceded by a courtyard surrounded by domed riwaqs, accented by the single tapering cylinder of its minaret (Figure 5.7). The most distinguishable element in the Mohammed Bin Abdul Wahhab

Mosque's architecture is the ninety-nine domes that represent an imitation of the al Qubib Mosque. The form and the concept of multiple domes was built as quotations from al Qubib Mosque's domes; there are twenty-eight domes that cover the main prayer hall with a height of eight metres, and sixty-five smaller domes, with a height of two metres, which covers the arcades areas. These sand-coloured domes are extremely simple but are manifested in harmony and in proportion with the mosque's composition.

5.4.3 The Architectural and spatial components of the mosque:

5.4.3.1 The minaret and the domes

There is a single minaret built at the corner of the mosque complex with a height of sixty-five metres. The minaret design can be divided into three sections: a) the rectangular base; b) the mid-section, incorporating the cylindrical body of the minaret; and c) the top section, which includes the glass windows and the minarets pointed grooved cap. The design of the minaret, as mentioned earlier, is similar to the minaret of Al Qubib Mosque built in 1878 (Figure 5.8).

Nevertheless, the design of the minarets was also found in many older mosques in Qatar, as in the Mosque of Al Ahmed, built in 1964 in central Doha (Figure 5.9).

Although the emphasis of the mosque design was to be on the preservation of Qatar's national heritage, local identity and enhanced Islamic values, the State Mosque of Qatar was built with the intention of forming an architectural landmark and a tourist attraction in the state of Qatar.
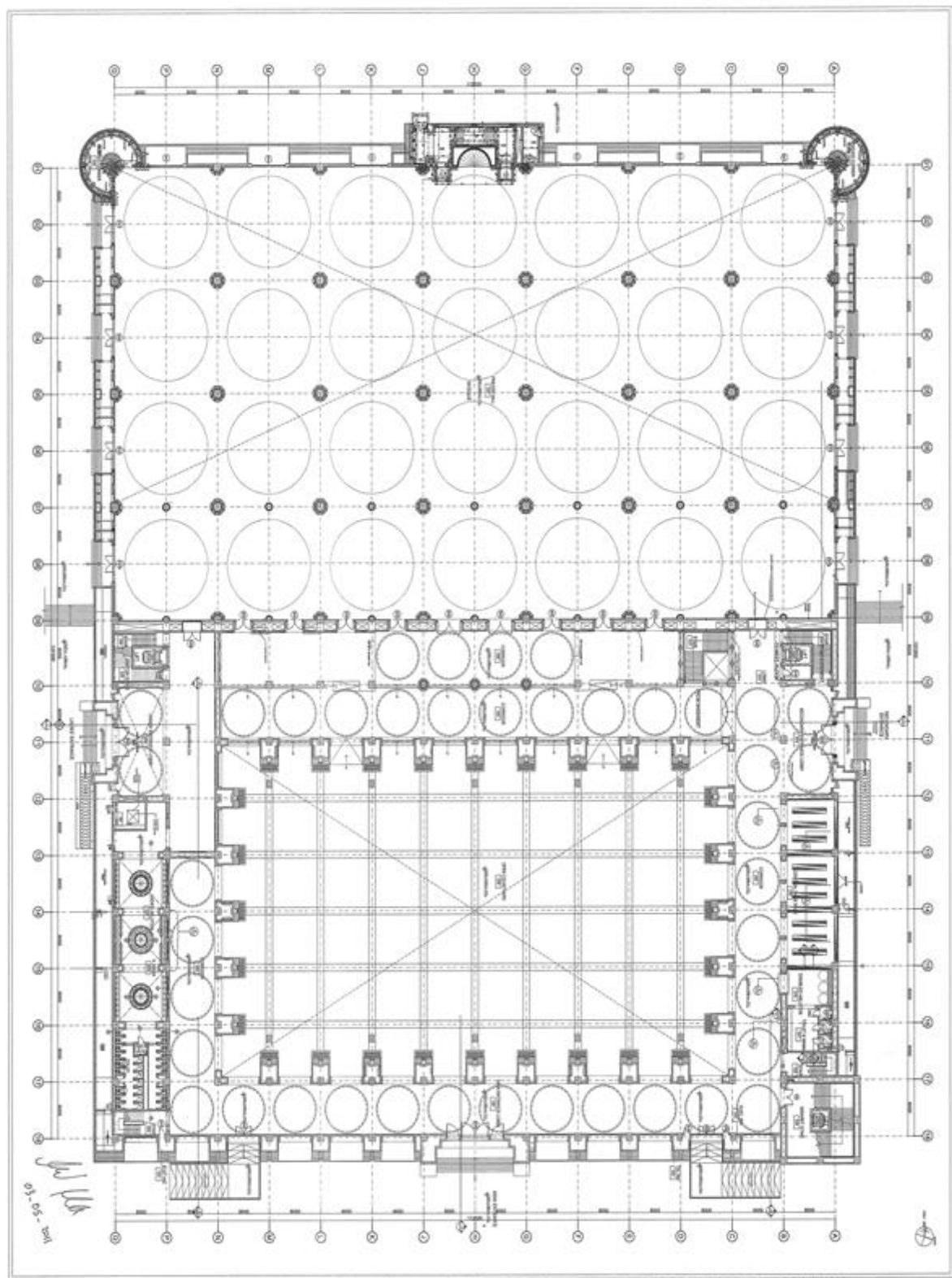
Figure 5.7: The ground floor plan of the mosque. Source: (the private office at the Royal Court of Qatar).

The Architectural and spatial components of the mosque
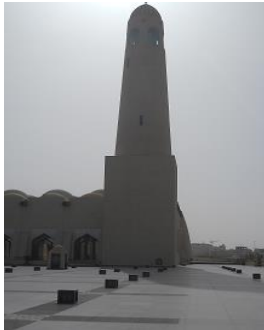
Minaret   roofed domes   Main gate   Fountain

Front courtyard   Riwaq   Inner courtyard
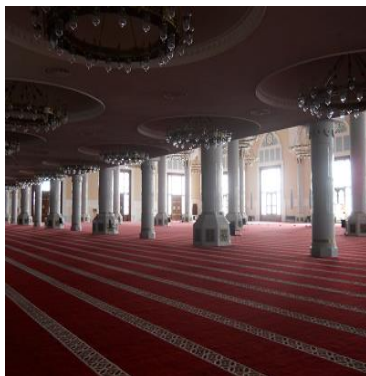
Main Prayer hall   Mihrab and minbar

Figure 5.8: the Mohammed Bin Abdul Wahhab Mosque architectural and spatial elements.

Source: (photo by the author).
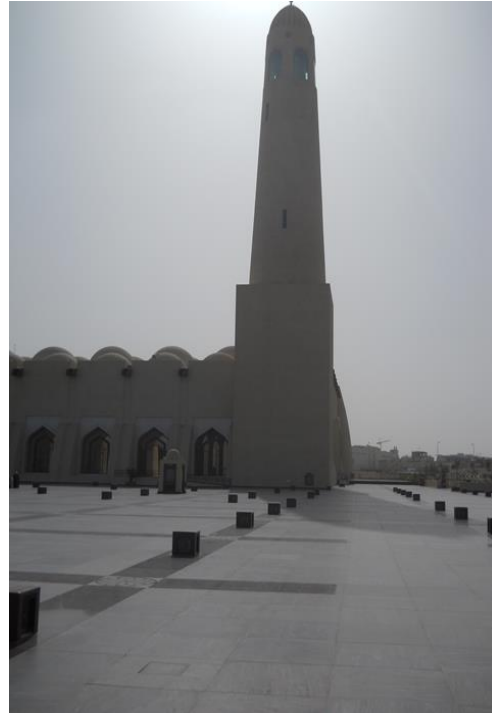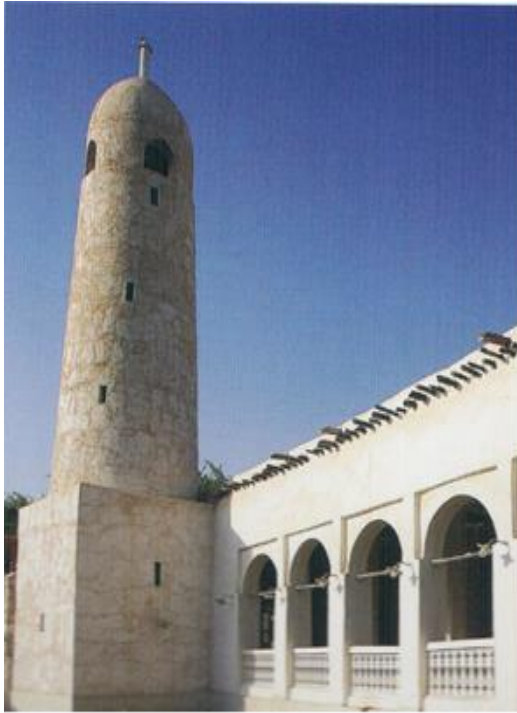
Figure 5.9: at the left, the minaret of Al Ahmed Mosque, and the minaret of Mohammed bin Abdul Wahhab Mosque at the right. Source: (ibid).

5.4.3.2 Main gate and front courtyard

The gate is a spatial element that expresses a transition space between the interior of the mosque and the busy exterior. But in this case, the main gate is positioned in front of the courtyard that can be utilised on some occasions as a prayer place if the mosque prayer hall is full of worshippers, especially during the holy month of Ramadan and *Eid* days (Figure 5.10).

There are three main entrances: the main entrance (gate) which is placed at the centre of the front façade; a female entrance, located at the southern side; and a third male entrance at the northern side. However, there are also as many as seventeen side entrances that can be used if required.

The main entrance is accessed through the front courtyard via seven steps leading to a wooden door of six metres in height that is in the shape of a pointed arch with smaller doors at each side. The shape of the door replicates the shape of the windows and entrances on the sides of the main entrance. The wooden materials used in the making of the doors and windows were imported from India, while the fabrication process and the aesthetic work was done in Qatar.

Figure 5.10: The main gate and the front courtyard. Source: (ibid).

5.4.3.3 Riwaq and the central courtyard

At the front façade of the mosque, a single row of domes is aligned above the arched windows and entrances in a symmetrical order, where the first arcade (riwaq) is set under these domes and opened into the inner courtyard which is defined by three more arcades (Figure 5.11).

The main entrance is indirectly connected to the inner courtyard and the mosque's immediate context. This connection is emphasised by a singular riwaq, which leads to the right into the

minaret stairs, lift, disabled ablution facilities and shoe rack spaces. Entering the mosque to the left, there are women's ablution facilities, bathrooms, stairs and elevators leading to the women gallery at the mezzanine level.

Figure 5.11: The interior of the first arcade (riwaq), opening to the inner courtyard. Source: (ibid).

5.4.3.4 The drinking water fountain

Some four drinking water fountains are built at the front courtyard that are integrated in units of rectangular structure; each unit has four drinking fountains with a single dome built in the top which resemble the design of the mosque's domes. The location of the fountain is positioned in approximate distance to the stairs and escalators that connects the underground level which contains the car parks spaces, to the ground level.

The ornamental details of the fountains were expressed by the application of the Islamic geometric shapes applied into the marble and mosaic used in constructing the fountains, as well as in the golden panel engraved with Quranic Verse on the top (Figure 5.12).

Figure 5.12: The drinking water fountain unit positioned at the front courtyard. Source: (ibid).

5.4.3.5 The main prayer hall and mihrab

The main prayer area is a rectangular-shaped space, roofed by twenty-eight domes, supported by forty-five columns covered by white marble and decorated with golden crowns. The base of the columns has built-in wooden shelves to be used as a display for the Quran or Islamic books, as the prayer hall hosts qur'anic classes. From the centre of the domes, rounded chandeliers are dropped in proportion to the rows of the columns. The floor is furnished with simple, red carpet with yellow straps and made of natural wool.

The mihrab is constructed in concave form at the Qibla wall and draped by white wood and gypsum, with carvings of golden ornamentations all around the arch and the inner walls. There are two electronic clocks on both sides of the mihrab facing the prayer hall; there are also two minbar, which can be used by the Imam through a wooden stair from inside the mihrab. The height of the mihrab reaches almost eleven metres.

5.5 Conclusion

As the Gulf countries were in a transition period during their independence in the 1970s, with oil revenues, the significance of the building of the state mosque was crucial to reflect the new states and their national architectural language. However, the balance between modernity and tradition was a challenge to the architects and decision makers in these new states, as the formal languages and architectural identity of the mosques are the two main parameters that shape and direct the mosque's character in the city.

The Muhammad ibn Abdul Wahhab State Mosque, seems to be a challenging experience for the architect, he was quoting an old and relatively small-scale mosque and converting its architectural design to a larger official state mosque, with high attention to detail. The process of implementing the artistic motives and gypsum works made the mosque stand out as an iconic building in Doha city.

Finally, with regard to the Muhammad ibn Abdul Wahhab's State Mosque, the traditional architectural language of the mosque is visually present in the physical elements, as in the minaret and the domes, but due to the scale of the mosque and the implications of its socio-political aspects mentioned earlier, the mosque stands as a landmark building rather than a worshipping sacred place that connects people together on a social and spiritual level.

However, the next chapters will investigate in detail the mosques of El-Wakil, Badran and Makiya, which have made more serious attempts to engage with tradition and build a contemporary Islamic language.

CHAPTER SIX

THE MOSQUE OF ABDEL WAHED EL-WAKIL: A REINTERPRETATION OF THE TRADITIONAL CONTEXT OF THE MOSQUE

6.1 Introduction

This chapter constitutes the first analysis of the part of the thesis that studies three of the key contributors to a critical examination of the form and identity of the mosque in contemporary Gulf architecture. It provides an analytical study of the Yateem mosque located in the city of Manama, the capital city of Bahrain, designed by the Egyptian architect Abdul Wahed El-Wakil who is considered to be one of the key architects in the mosque architecture of our modern time. The study will explore his methods, visions and his theoretical framework of translating the traditional forms and concepts into an architectural reality in his mosque design. Also, it will aim to answer the question of how El-Wakil responded to the modernity discourse that Arabian Gulf countries sought after in the 1970s and 1980s - as discussed in the previous chapter. Moreover, what the formal and spatial languages are that El-Wakil adopted as a result of these complex problems of the reinterpretation of the past forms and architectural vocabulary and, finally, how the extent of the constraints made by the governmental authorities impacted on his design process of mosques in Arabian Gulf cities.

This chapter will aim to explore El-Wakil's methodologies and approaches in designing a mosque with a contemporary-traditionalist architectural language, as the analysis will conclude by investigating the Yateem mosque in Bahrain as a case study.

The analysis will explore the architectural language of Yateem mosque, and look at the key elements of the mosque's structure for their critical implications on the mosque's formal language. It will examine the spatial qualities of the mosque's layout in terms of both its conceptual and spatial languages. With the aim to clarify how the spatial organisation and the mosque's architectural elements relate to each other and take each other into account; thus, forming a distinctive character of the mosque as a whole.

The methodological framework of this chapter involved a combination of field work supported by the literature review into El-Wakil's work and the literature review of the previous chapters. The field work, which was conducted in Bahrain and Qatar between March 2012 and July 2015, included structured interviews with El-Wakil; site visiting; photographic and social observations.

The chapter will start with a brief profile of El-Wakil's career and his achievements, followed by a review of his work in Saudi Arabia, where he designed and supervised the building of more than fifteen mosques, which vary in scale from small mosques and community mosques to the larger Friday mosques. Examination of El-Wakil's mosques will offer an insight into his architectural philosophy, influences and ideas. Furthermore, the examination of selected mosques will be used as a background in order to enhance the analysis of the Yateem mosque by comparison.

6.2 Abdel Wahed El-Wakil: education, career and achievements

Abdul Wahid El-Wakil was born in Cairo in 1943; he graduated in 1965 from Ain Shams University in Cairo and in the same year he joined the faculty of engineering as a lecturer – ending in 1970. During this period, El-Wakil began his master's degree thesis; influenced by his interests in traditional architecture, he decided to study the work of Hassan Fathy as the subject of his research but he could not complete his degree as he was faced with rejection from

the university of Ain Shams' professors who considered Hassan Fathy's work as a step backwards. However, he left the university and joined Fathy's practice for five years, from 1968 – 1973 (Khan, H., 1980, pp. 46-47). In my interview with El-Wakil, in March (2012), he described these events in his early stages of his career as an architect: 'I have learned from Fathy and from being in practice, from the craftsmen and being in the construction sites more then I will have ever learned from a scholarly degree'. This experience marked a turning point in El-Wakil's life as he later left Fathy to establish his own practice in Kent, United Kingdom.

El-Wakil who has received the international acclaim by winning the Aga Khan Award for architecture, first in 1980 for the Halawa house in Agamy in Egypt - which was completed in 1975 - and then in 1989 for the Corniche mosque in Jeddah, Saudi Arabia. In addition to this, he also earned 'The King Fahd Award for Research in Islamic Architecture in 1985, an award and trophy for his achievements in the city of the Medina in 1994, and the Richard H. Driehaus Prize for his contributions to classical architecture in 2009' (Keegan, 2008).

Most of El-Wakil's work has captured the interest of scholars and researchers and was published in international journals that includes *The Architectural Review, MIMAR and architectural design.* When El-Wakil earned the Aga Khan award in 1989 for the corniche mosque, the jury citation stated that El-Wakil:

Should be cited as a proponent for innovative sitting, for rethinking classical methods of building, and for the effort to compose formal elements in ways that bespeak the present and at the same time reflect the luminous past of Islamic societies (Serageldin, Steel, 1996, p. 51).

El-Wakil, like Fathy kept largely to traditional forms but has reinterpreted them with integrity and clarity - so that they seem in some way 'contemporary' for our times - at the same time he has avoided pastiche or simply copying the past.

6.3 Review of El-Wakil's mosques in Saudi Arabia: a contemporary approach

The Suliaman Palace was El-Wakil's first commission in Saudi Arabia, built in 1980, which brought the attention of the Saudi authorities to his work and opened the door for El-Wakil to design a series of mosques in the Saudi Arabian cities of Jeddah, Riyadh, Makkah and Madinah and to the neighbouring Gulf capital cities of Bahrain and Qatar. This group of mosques can be categorised according to three criteria: a) the size which ranges from an area of one hundred ninety-five square metres to fourteen thousand square metres, which therefore determines b) the type of utilisation of the mosque; a small mosque, community mosque, and/or a Friday mosque. The last category, c), is based on the historical importance and the religious value of the mosque (See Table 6.1).

The small mosques are the ones that have been built with the intention to be served only for conducting the five times prayers during the day, due to their limited capacity of accommodating worshippers. However, these small mosques, as in the island mosque and the Corniche mosque, were initially built as part of Jeddah's municipality plans to enhance the city's seafront.

From an architectural language perspective, the selected small mosques exhibited the architect's dependency on the eclecticism of architectural themes as his source of inspiration, in which he re-produced forms that he borrowed from variations of past traditions' vocabulary in the Islamic world. An approach that El-Wakil confirms in all of his mosque projects, emphasising his opposition against the modernity of the twentieth century, a stance that he inherited from his former mentor, Hassan Fathy, who was anti-modernist. In my interview with El-Wakil (2012), he argued that 'tradition is a continuity process; you cannot describe mosque architecture by using the term "modern", modernism should not be associated with the sacredness of the mosque'. He explained further that 'prayers can be done anywhere. The meaning of sacred place is not yet fully understood, and the sacred art, which is something that

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I have worked with in all of my projects; is also not fully known to some of the mosque's

architects.'

Name of the mosque	Mosque's category/type	Place of the mosque	Date of building	Historical & religious importance
The Island mosque	Small mosque	Jeddah, Saudi Arabia	March-1986	Qubbah mosque 1986
The corniche mosque			Decmber-1986	Masjid Al-Qiblatayn 1988
Binladen mosque			1988	Miqat mosque, 1989
Al-Ruwais mosque			1989	
The Yateem mosque		Manama, Bahrain	1992	
Maydani mosque	Community mosque	Riyadh, Saudi Arabia		
The Aziziah mosque		Jeddah, Saudi Arabia		
Al- Suliaman mosque		Jeddah, Saudi Arabia	1980	
AL-Harthi mosque		Makkah, Saudi Arabia	1986	
Al-Juffali mosque		Jeddah, Saudi Arabia	1986	

Al-Hafayer mosque		Makkah, Saudi Arabia		
Al-Madinahh airport mosque		al Madinahh, Saudi Arabia		
Al-Dariyah mosque		Riyadh, Saudi Arabia		
Al-Attiyah Mosque		Doha, Qatar	2013	
Al-Malaz mosque		Riyadh, Saudi Arabia		
King Abdullah financial district mosque		Riyadh, Saudi Arabia	Never built	
The King Saud mosque	Friday mosque	Jeddah, Saudi Arabia	1987	

 Table 6.1: El-Wakil's mosques in the wider Gulf region.

El-Wakil, who successfully (as the progression of the analysis of his mosques illustrates) created a harmonious synthesis of old and new within a contemporary context; he has re-validated traditional forms by giving them a new validity. El-Wakil (2012) believes that 'modernism can destroy culture, thereby, identity is lost'. During the interview, he asserted that he firstly studied the culture and more importantly the architectural patterns of the country in order to keep its real culture retained in his mosque design.

Although, El-Wakil used the prototypes of previous culture and then re-introducing them in contemporary models, the fact is that most of his mosque projects that were built in Saudi Arabia have had minimal recognition from the Najdi or Hijazi traditional architecture and, in

some cases, a complete dismissal of them. For instance, the corniche mosque - mentioned earlier - resembles 'a Mamluks prototype from Cairo, which had a similar composition and a large entrance iwan' (Steel, 1988, p. 23)

In light of his previous statements, there is a contradiction between what he stated and the architectural reality of his mosques, not only in the Saudi Arabian cities but also in Bahrain as the analysis of the Yateem mosque will highlight his application of different architectural patterns in the mosque's visible and spatial elements.

The significance of the assimilation of these traditional elements of the Arabian Gulf mosques - discussed in Chapter 4 - relies not only on respecting the values embodied in the traditional character of the mosques of the past - while preserving these values in a way that reflects contemporary needs and shifting identities but also to reinstate the cultural value and identity of these countries, while the 'preservation of values rather than preservation of forms or ornamental detail is, as in all creative cultural revolutions, a reinforcement of identity' (Kultermann, 1982, p.74). Since the majority of his mosques were built in the cities of the Hijaz province, practically, in the city of Jeddah, it will be crucial to briefly explore, firstly, the traditional architecture of this region in order to provide an architectural reference.

6.4 Overview of the Hijaz's architecture and its characteristics:

Jeddah city is located on the western cost of Saudi Arabia; it is the country's largest port and the main passage for pilgrims visiting the holy cities of Makkah and Al Madinahh - these three cities are the principal cities of the *Hijaz* province (Figure 6.2). Geographically, 'Al-Hijaz occupies most of the western part of the present Kingdom of Saudi Arabia. It runs along the eastern coast of the Red Sea' (Taufik, 1973, p.4). The word 'Hijaz' literally means 'the barrier' which separates the middle region (Najd) of the Arabian Peninsula from the western region

(Hijaz) by a chain of mountains called *Jabal Al-Sarawat* which extends from the northern part of Saudi Arabia near to the Jordanian borders to the south in Yemen (Kamal, 2014).

Hijaz region was under the Ottoman administration that lasted from 1517 to 1918. (Teitelbaum, 2001, p.11). However, in 1924, it was conquered by King Abdu Aziz, who later in 1932 declared the present kingdom of Saudi Arabia 'For centuries it has been the home to a huge confluence of people from diverse countries of origin and offered hospitality'. (Tarabulsy, 2008).

'The architecture of the Hijaz is particularly subject to outside influences'. (Petersen, 1999, p.253) was one of the most culturally diverse regions, whereby this cultural exchange made an impact on the architecture of the Hijaz region and these influences are the result of the following factors:

1. Jeddah was an important trading port and, thus, a cross-culturalisation between the trading Middle-Eastern, Asian and European nations enriched the arts and architecture of Hejaz.

2. The Hajj pilgrims who came from various parts of the world brought their skills and exchanged ideas with the local people.

3. Also, the building activities in Egypt influenced the construction skills and architectural knowledge of the people of Hejaz. For example, Rowshans and Mashrabiyas (projected screened windows) which are prominent features of Hejaz architecture came from Egypt through Jeddah, 'the city traditional architecture reflects both Egyptian and ottoman influences'. (Al-Asad, 1989, p.3).

4. The Ottoman influence, for example, the five-story tower houses that are a characteristic feature of the old city of Jeddah, were built during the Ottoman period Also, the last surviving example of an Ottoman mosque is the *Ambariah* Mosque in Al

Madinahh, built in 1909 under the rule of by the Ottoman Sultan Abdul Hamid II - next to the Hijaz railway station. (Figure 6.3).

Figure 6.2: Map of Saudi Arabia, showing the location of the city of Jeddah. Source: (www.mapsof.net/ map/jeddahsaudi-arabia).

Figure 6.3: Ambariah mosque in al Madinah city in Hejaz region. Source:(
http://ahlesunnatuljamaat.com/Madinahh-Prophet-mosque/).

The architectural features of Hejaz region were document by King (1998, p. 17-106) in his book titled '*The Traditional Architecture of Saudi Arabia'*. The most dominant architectural element was the Rowshans, and the wooden screens that attached to the interiors of the windows shafts, which allows for the circulation of air. In addition, to the wooden façades and plaster decorations engraved with ornamental motifs. The following images are provided to illustrate some of the so-called Hejaz traditional architectural and interior design decorative elements. The aim of this examples is to provide a base that can be used as template in regards to in what extent El-Wakil have referred to the local architecture in the four selected mosques in Jeddah. (Figure 6.4a, 6.4b).

Figure 6.4a: The interior decoration of house in Jeddah, design of arch and motifs patterns.

Source: (King, G. 1998, p. 40-68).

Figure 6.4b: Engraved wooden doors and Rowshans. Source: (King, G. 1998, p.34-40).

6.4.1 The first mosque of El-Wakil in Saudi Arabia: The Suliaman mosque in Jeddah

During the 1980s, El-Wakil had designed and built more than fifteen mosques in Saudi Arabia, the majority of these mosques were erected in Jeddah. The very first of El-Wakil's mosques in Saudi Arabia was the Suliaman mosque, built in the Al- Hamra'a district in a relatively close distance to the Suleiman's palace, this mosque was built on plot of ten thousand square meters with a capacity of accommodating over one thousand worshippers. The mosque was erected on a raised platform with total area of one thousand and five hundred square meters. The plan of the Suleiman's mosque follows the rectangular traditional form with a single internal courtyard; a central dome built over the main prayer hall and a single minaret at the northern corner of the mosque. Moreover, there is a women's prayer gallery at the mezzanine level, accessed by a staircase. (Figure 6.5).
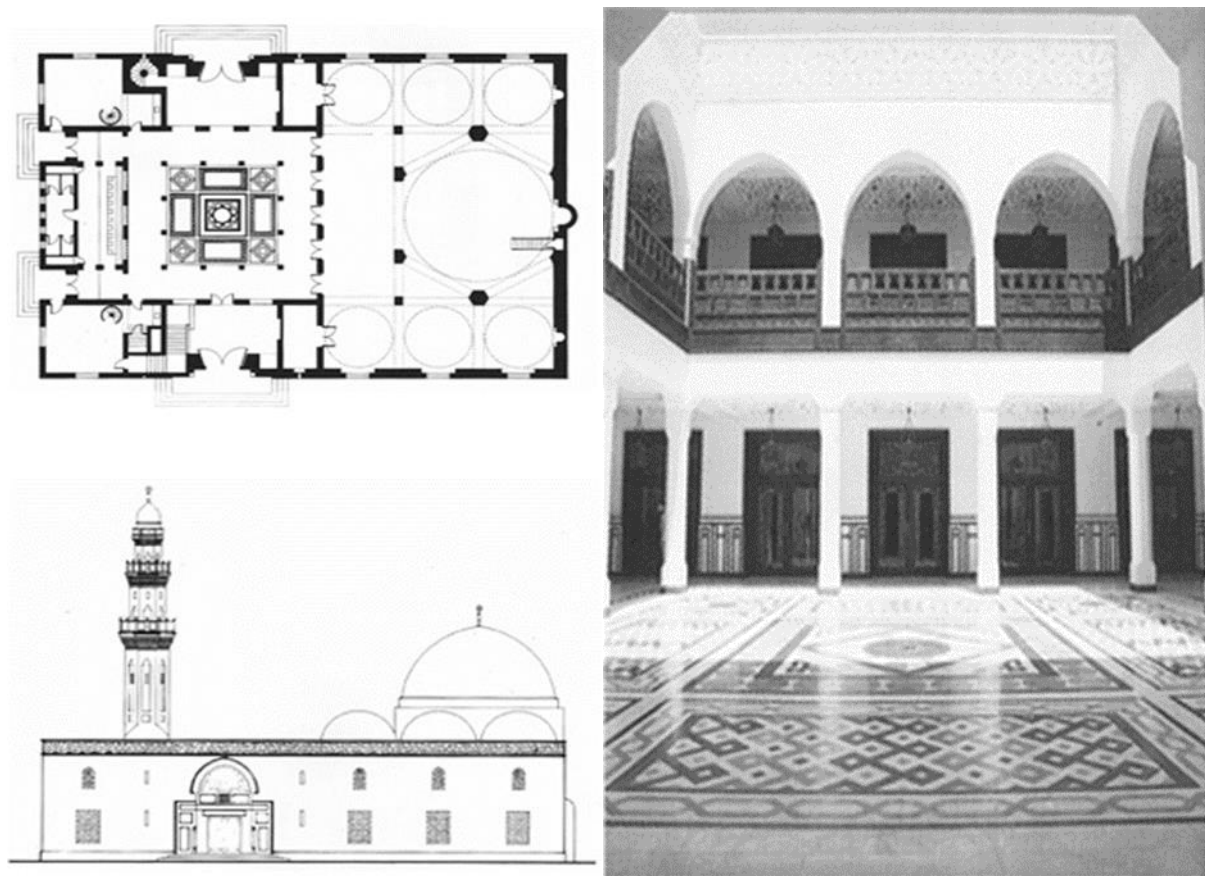
Figure 6.5: The Suliaman mosque's ground floor plan, elevation and the inner courtyard.

6.5 Analysis of El-Wakil's Small Mosques

Five small mosques, designed by Egyptian Architect Abdul Wahid El-Wakil, listed in the following table, shall be used as case studies for the analysis. This scheme was undertaken by the Ministry of Hajj and *Awqaf* in 1980 and Deputy Mr. Hossam Khashoggi was entrusted with its organization. The four mosques listed below which were built in Jeddah between 1986 and 1989. Also, the Yateem mosque is included in the table, which was built in 1992 in Manama. (Table 6.6).

Mosque Name	Client	Location	Year of Construction	Site Area M2	Total Area M2	Estimated Cost
Corniche	Ministry of hajj & Awqaf, & Jeddah Municipality	Jeddah	1986	1200	195	SR 1,500,000
Island	Ministry of hajj & Awqaf,	Jeddah	1986	2500	400	SR 5,500,000
Al- Ruwis	Municipality of Jeddah	Jeddah	1989	2945	216	SR 4,000,000
Binladin	Binladin Organization	Jeddah	1988	1,850	123	SR 3,000,000
Yateem Mosque	Private financing/donation	Manama	1992	570	570	BD 250,000

Table 6.6 The Five Small Mosques designed by El-Wakil.

The Municipality of Jeddah selected four sites for the construction of these religious structures. The Corniche mosque is built on an isolated sand dune, off the southern part of the Jeddah Corniche. The Island mosque was erected on a 2,500-sq. meter island, at a short distance to the south of the Corniche mosque and connected to the main island by means of a small bridge. Al- Ruwais mosque lies to the south of the Corniche and Island mosques, on the Red Sea

coastline. It overlooks the Corniche mosque and constitutes a dominant land mark. Binladen mosque is located on a main thoroughfare of Jeddah, close to a residential district. The main design concept of the four mosques was based on plans where the prayer hall occupies most of the space and other functions are reduced to a minimum.

6.5.1 The Corniche Mosque:

The Corniche Mosque, is the most striking one of this group, because of its formal architectural language. Both Island and Corniche mosques are small in size and generally adopting similar structural and constructional techniques. The two mosques are utilizing the cool sea breeze for natural ventilation. The Corniche mosque built on reclaimed land from the Red Sea. Regarding the size, the Corniche mosque is relatively smaller if compared to The Island Mosque, covering an area of 195 sq. meters. (Figure 6. 7) it is entered through the riwaq covered by the catenary vault which then leads to the part with the two domes - before the Prayer Hall (Figure 6.8). The external staircase leading to the minaret tower is located on the southern side of the main prayer hall, resembles the architectural vocabulary of the new Gourna mosque designed by Fathy in 1948. (Figure 6.9). Other similarities can be found in the shape of the openings articulated in the dome and minaret. The Corniche Mosque is built of burned red brick covered with plaster, which is the same constructional materials used for The Island mosque.
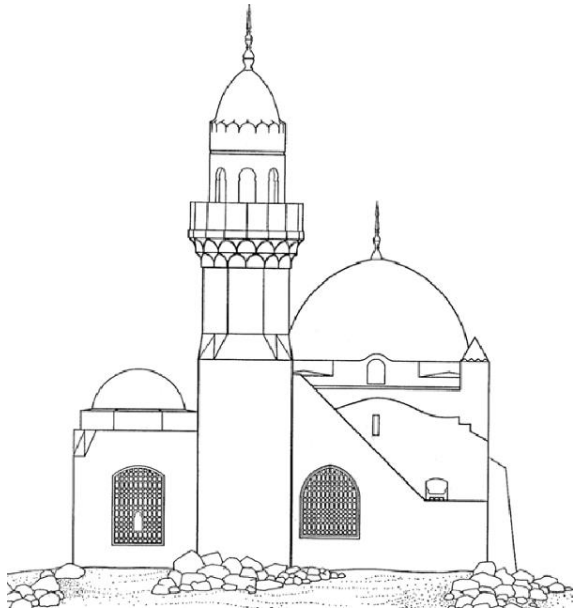
a. Corniche south elevation.   b. Corniche north elevation.
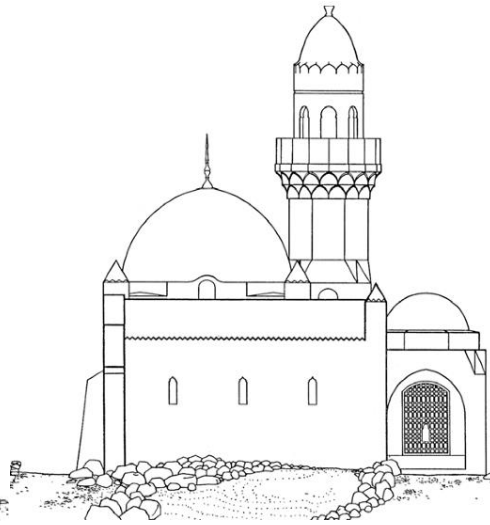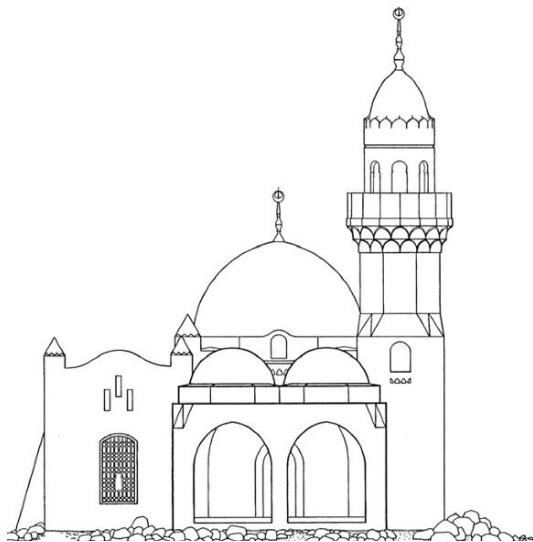
c. Corniche east elevation.   d. Corniche mosque west elevation.
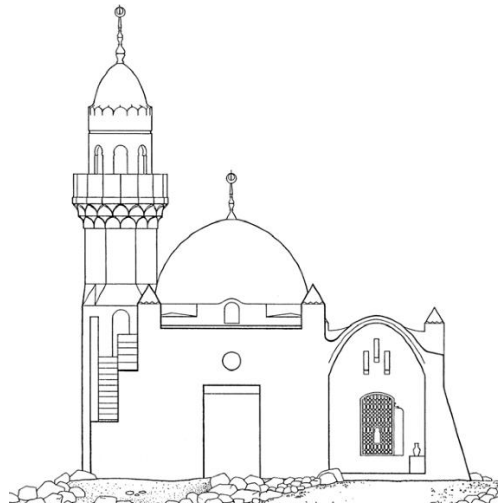
Figure 6.7 elevations of the Corniche mosque. Source: (Corniche Mosque Project Brief. Compiled by the Aga Khan Award for Architecture. Geneva: Aga Khan Award for Architecture, 2013.).

The floor is covered by granite tiles, forming a geometric pattern that enhanced the spatial character of the mosque. A minor difference between the design of The Island mosque and the Corniche mosque is in the construction of an annex containing a keepers' room and toilet for the Corniche mosque, which is lacking in The Island mosque.

Figure 6.8: The Corniche mosque overview and a close up to its geometric architectural forms. Source: (Courtesy of Architect, submitted to the Aga Khan Award for Architecture 1989).
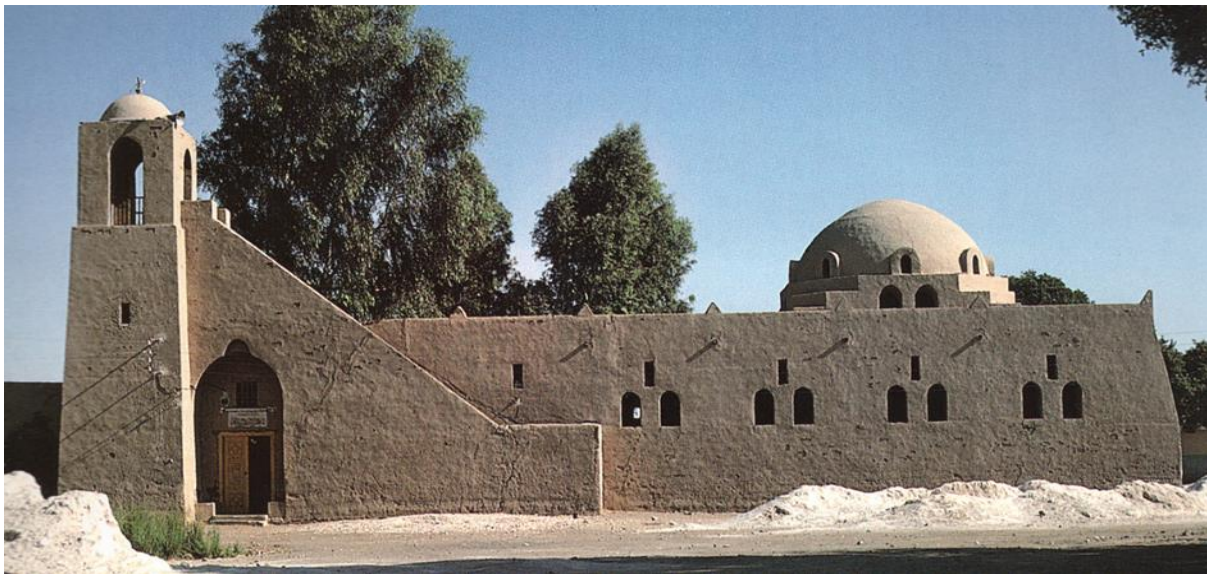
Figure 6.9: the new Gourna mosque built in 1948. Source: (Frishman, M. and Khan, H. 1994, p.258).

Formally and symbolically, the mosque is described as revivalist and eclectic. The clients, the Municipality of Jeddah and Ministry of Pilgrimage and Endowments of Saudi Arabia, first planned to place several sculptures all around the city of Jeddah. El-Wakil, receiving the commission, succeeded to convince the clients to build mosques instead of sculptures that will be more appropriate for an Islamic country Sugich, H. (1985-1986).

Even though, the Corniche mosque design is inspired by vernacular Egyptian and Mamluks architecture, local elements of design can be seen as applied by El-Wakil, by using Hejazi design patterns on the mosque's granite floor. (Figure 6.10).
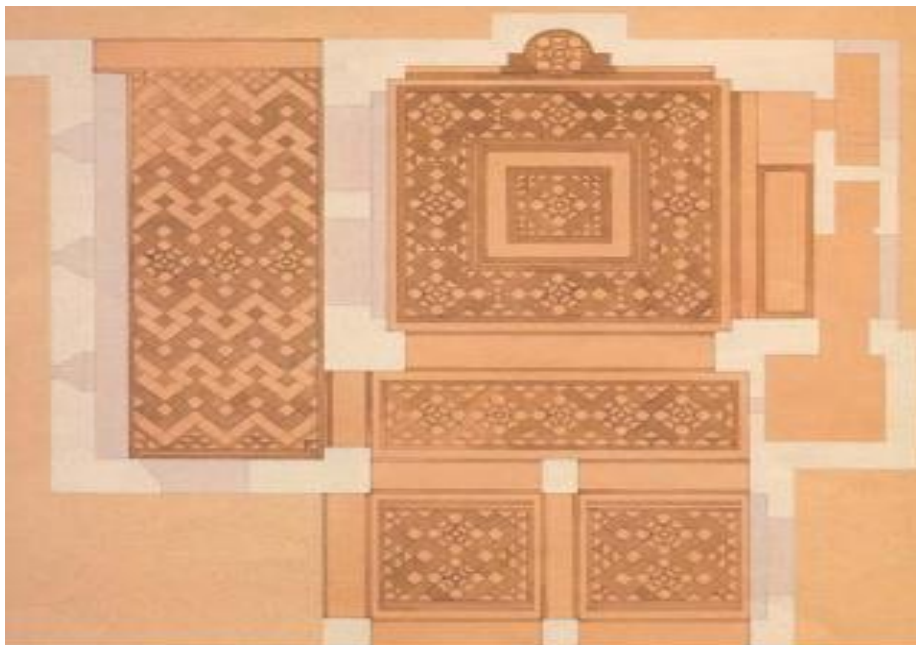
Figure 6.10: the floor patterns of the Corniche mosque. Source: (Corniche Mosque Project Brief. Compiled by the Aga Khan Award for Architecture. Geneva: Aga Khan Award for Architecture, 2013).

6.5.2 The Island Mosque

The Island Mosque, is located on an artificial island connected to Jeddah's seafront with a bridge. (Figure 6.11a, 6.11b) The Island mosque is designed with a square plan covered by a

central dome built on octagonal base, and placed above the prayer hall. The square minaret with its balcony articulated by a wooden parapet recalls early Mamluks examples.
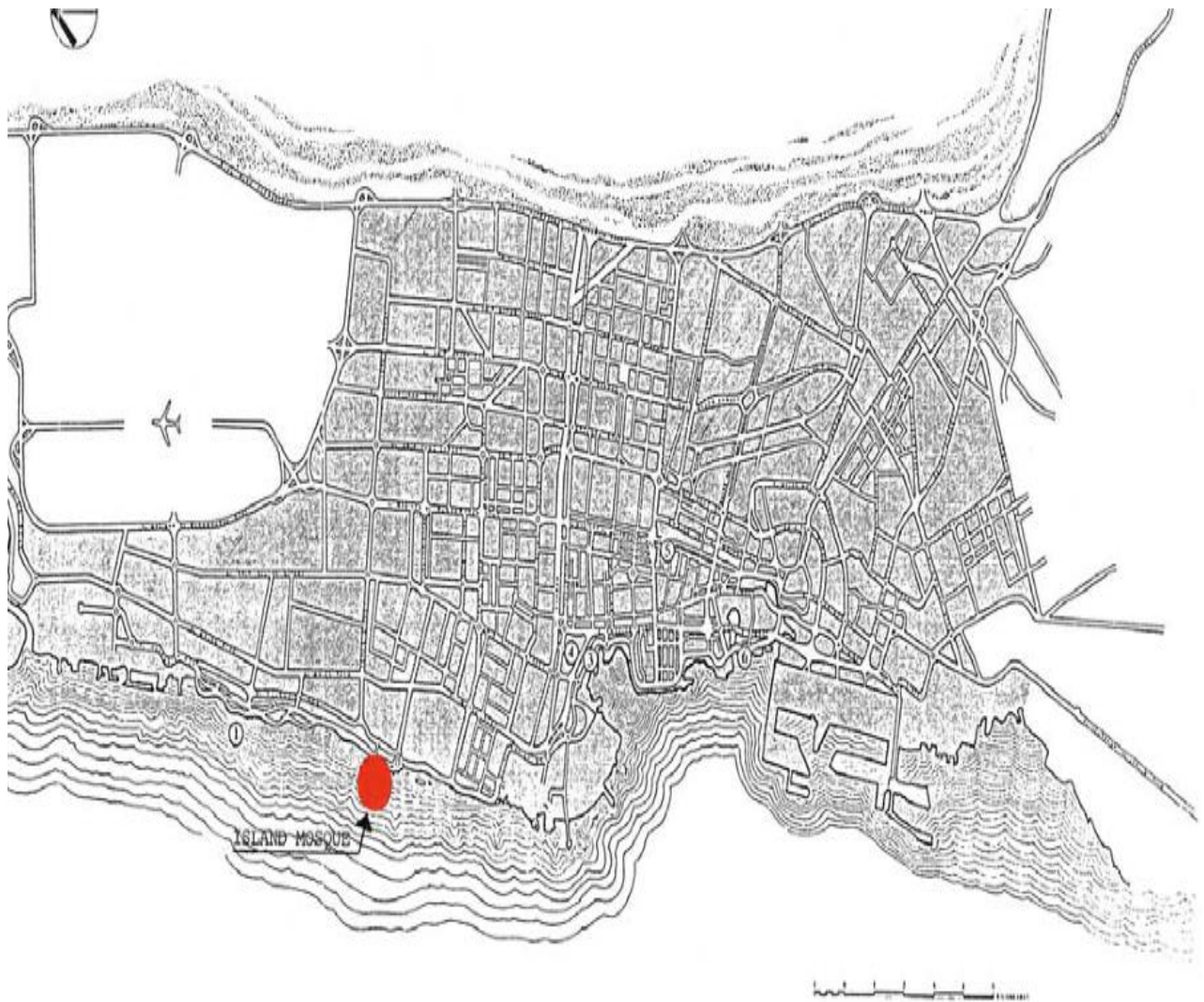
Figure 6. 11a: Island mosque location map. Source: (Island Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 198.)
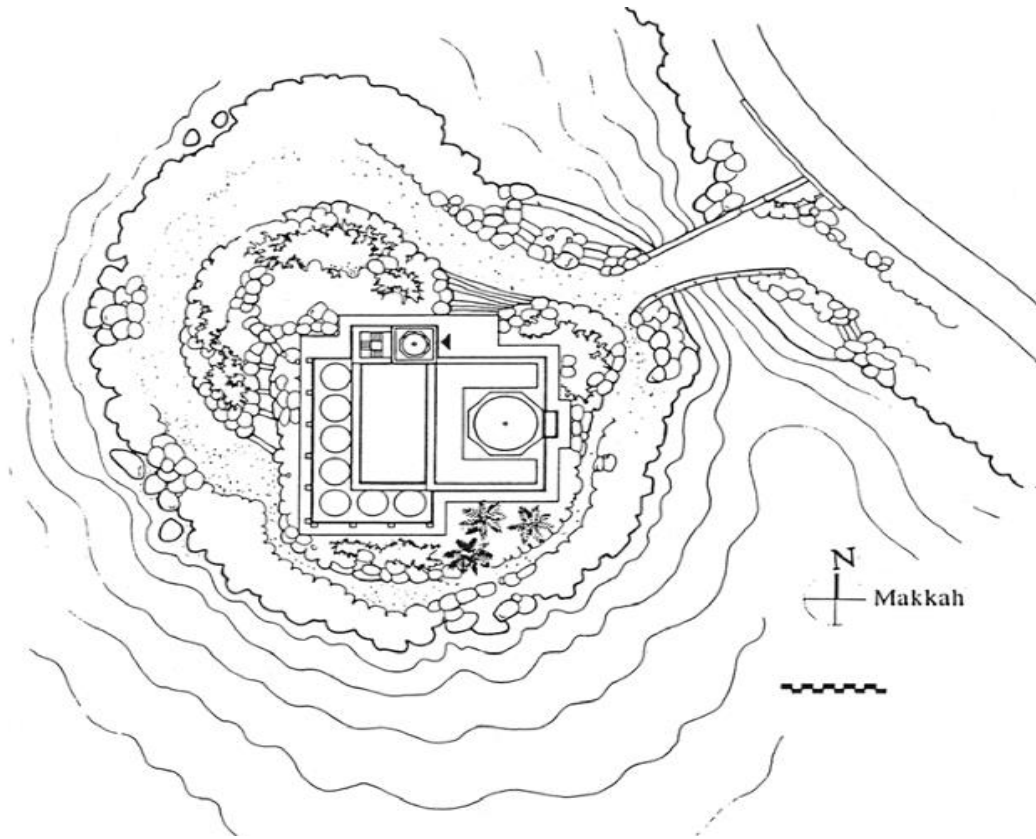
Figure 6.11b: Island mosque site plan. Source: (Island Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 198.)

Mainly the mosque is composed of a rectangular main prayer hall covered by a dome, directly above the Mihrab next to the Qibla wall. Surrounding each of its three sides are three meters high side-walls. The three vaults are carried by the walls and central arches, while the dome is carried on a perforated octagonal drum resting on four squinches, to square the circle. A large arch is located opposite the Qibla wall which opens to the courtyard with surrounding arcade, facing the interesting view of the sea. (Figure 6. 12a, 6.12b) The Minaret is located on north east corner of the mosque between the main prayer hall and the courtyard. With an opening from the courtyard leading to the entrance of the minaret. The construction of the minaret is based on the traditional concept of a strong massive square shaft which characterized the construction of early mosques in Islam. The shaft of the minaret is culminated by a wooden balcony carried on geometrically formed stalactites and stopped by octagonal shaft carrying a

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dome which is terminated by a brass crescent similar to that of the main prayer hall. The mosque which consists of a rectangular shape for the prayer hall, connected with the courtyard, with an entrance leading from the courtyard to the square base of the minaret. The prayer chamber is surrounded by aisles, covered by a dome on an octagonal shape. The façades facing the mainland were treated as mainly solid elevations with small number of openings. On the other-hand the main courtyard open toward the sea with its arcades. The main prayer hall size is nearly the same size as the open space sahan, which is located at the same axis of prayer hall to provide a strong connection between the two. The sahan could be used as an extra praying hall if the main prayer hall can't accommodate all prayers. Following the general concept of mosque architecture, the Qibla wall is mainly solid with no openings with the Mihrab taking a central location. The main elevation is facing the Mihrab with the perpendicular axis connecting both arches of the sahan and the main prayer hall. The Minaret is located to the left side of the main entrance with its stair case leading up to the top level of the Minaret where the microphones used to call for prayer are usually located.

Even though, the island mosque is a small mosque, it is also used for the Friday prayer. Since there is no separate hall which is designed to accept women worshipers, the large entry chamber is being utilized for this purpose, which can be seen as a missing component of this design.

Daylight is introduced through the high-level windows on both elevations perpendicular to the Qibla wall, together with a number of clear-sky-windows around the ring of the dome.
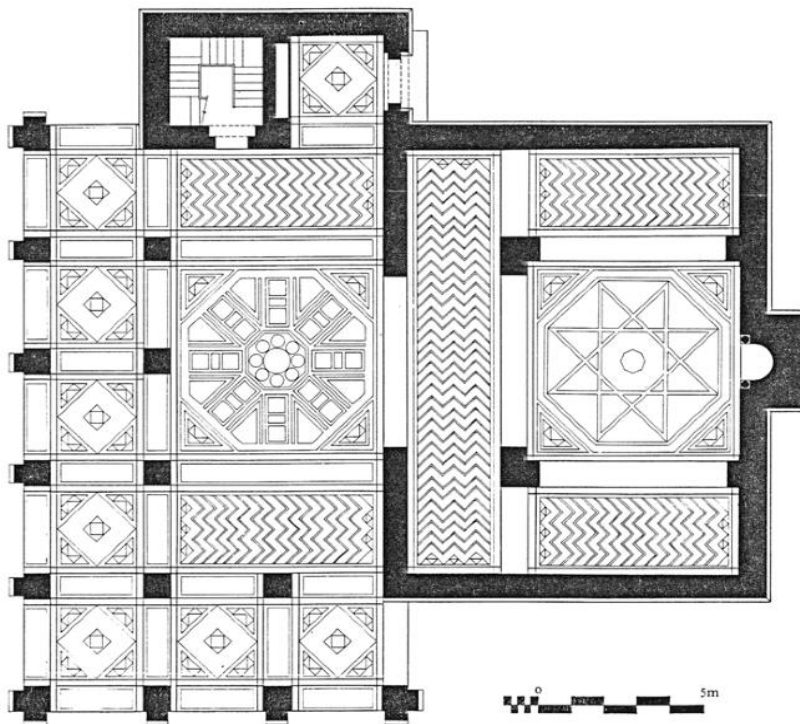
Figure 6.12a, 6.12b: View of the Island mosque, and floor plan. Source: (Island Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 198.)

6.5.3 The Binladen mosque

The Binladen mosque - also known as Abraj mosque - is located in the Al-Suhaifah district in Jeddah. The mosque design is mainly a square symmetrical plan made up of: a porch or *riwaq* leading to the main prayer hall covered by a central dome, covering most of the prayer hall. The minaret has a square-shaped base, located on the south side corner of the mosque, with access from the riwaq on the right of the main entrance. (Figure 6.13)

The minaret is designed with a single tier supported by muqarnas, culminated by a balcony. The architectural formal language of the minaret resembles the Ottoman pencil minaret. The minaret has an interior spiraling staircase leading to the balcony to be used by *Moathen* (the man who calls for prayers). The interior minaret staircase is also used in the Ruwis mosque and the Island mosque. (Figure 6.14).
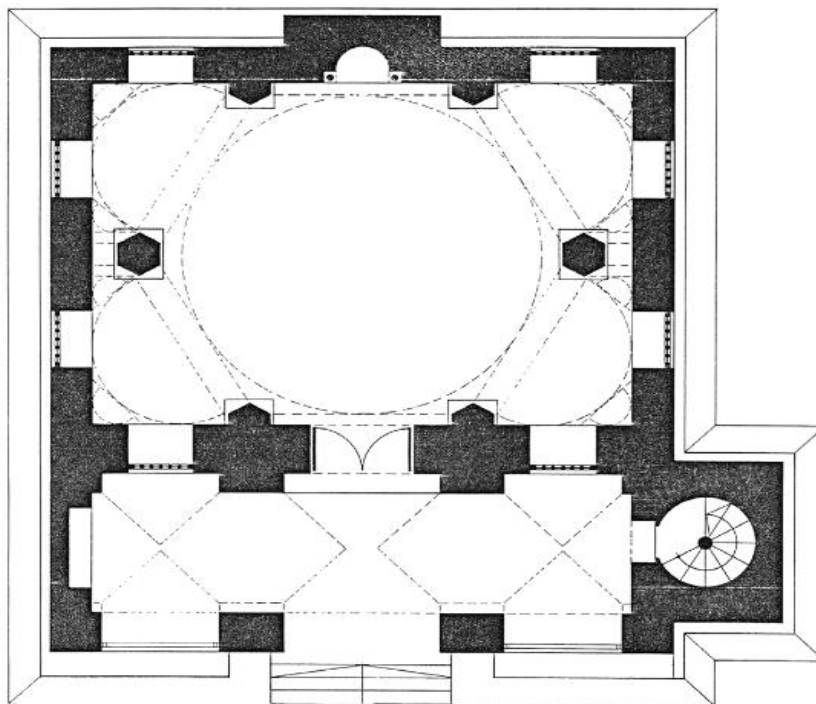
Figure 6.13: Binladen floor plan. Source: (Binladen Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 1989.)

Figure 6.14: View of the Binladen mosque. Source: (Binladen Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 1989.).

The dome rests on a hexagonal base supported by pendentives, in addition to two free standing pilasters that connected to the walls. In order to turn the dome into the circular domed area, an arrangement of four square inches resting on two smaller ones were used. This construction method of using square inches 'are the main method of transition in pre-ottoman architecture whilst pendentives are more common after the sixteenth century' (Petersen, 2009, p. 68). The design of the dome which is articulated by a ring of windows, recalls the Mamluks' architecture and was entirely constructed by burned red bricks without the use of reinforced concrete, similar to all of El-Wakil's domes in all of the four mosques. The interior of the dome was left exposed with a large brass chandelier suspended from the dome ceiling.

The riwaq is designed with three arches: a transition space to the prayer hall that acts as a spatial element, separating the interior of the mosque from the outdoor space. The arches were built with wooden rails designed with geometrical shapes taken from Hijazi architecture. However,

the design of the arches is similar to the ones found in Indian architecture and does not reflect the local traditional arches design. (Figure 6.15).

Figure 6.15: the interior of the prayer hall and the riwaq arches. Source: (Binladen Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 1989).

On the other hand, the mihrab, was incorporated with Hijazi patterns of geometrical and botanical decorations, engraved in the concave surfaces and the surfaces of the mihrab wall. Moreover, there is calligraphy of Qur'anic verses designed by golden and green colours framing the mihrab wall. With regards to the four mosques, the Binladen formal composition seems to be following the traditional Arabic mosque's spatial organisation.

6.5.4 The Ruwais mosque

This mosque design expression is more contemporary in terms of its architectural language than the previous mosques discussed above. The distinguishing features of the Ruwais mosque are represented by the three domes constructed above the Qibla wall, and the two layers of catenary vaults, built with the aim of providing ventilation for the prayer hall. The square-based minaret, on the other hand, is shorter than the ones in the previous mosques, positioned at the southeast corner of the mosque's square plan. (Figure 6.16).
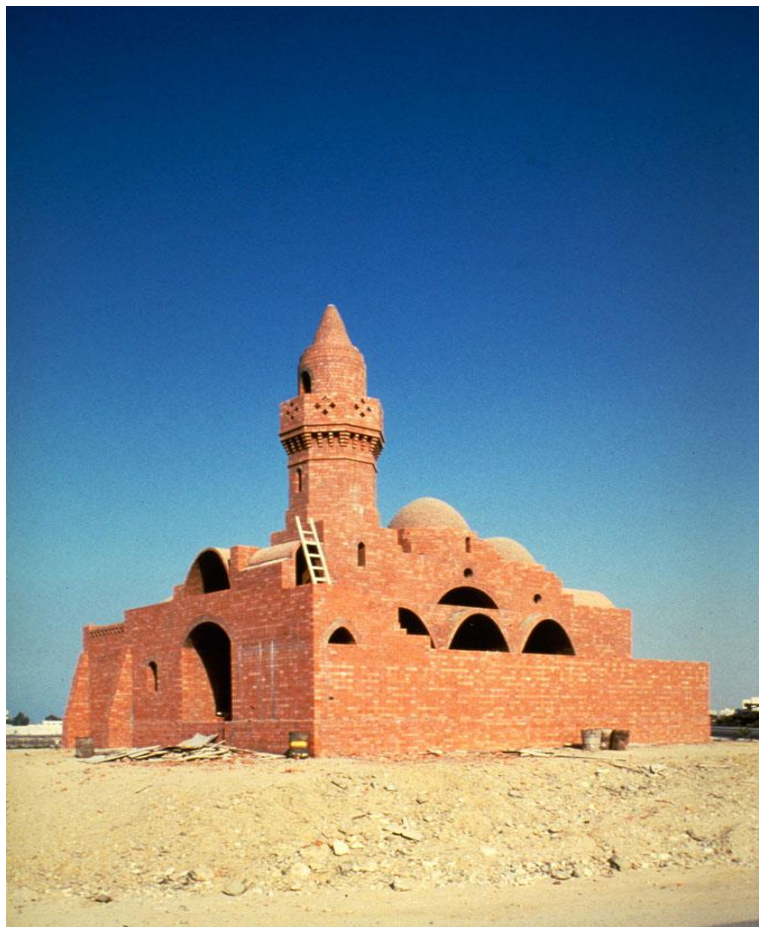
Figure 6.16: The Ruwais mosque under construction. Source: (Ruwais Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 1989).

The mosque has four entrances, two are located on the west side opening to the two riwaqs extending along the south and north sides of the prayer hall. The two other entrances, are

located at the south and the north sides along the same axis on opposite sides. Also, the riwaq arches are semi-covered by geometrically designed grilles, parapets are used along limited areas of the mosque's exterior walls. (Figure 6.17a, 6. 17b).
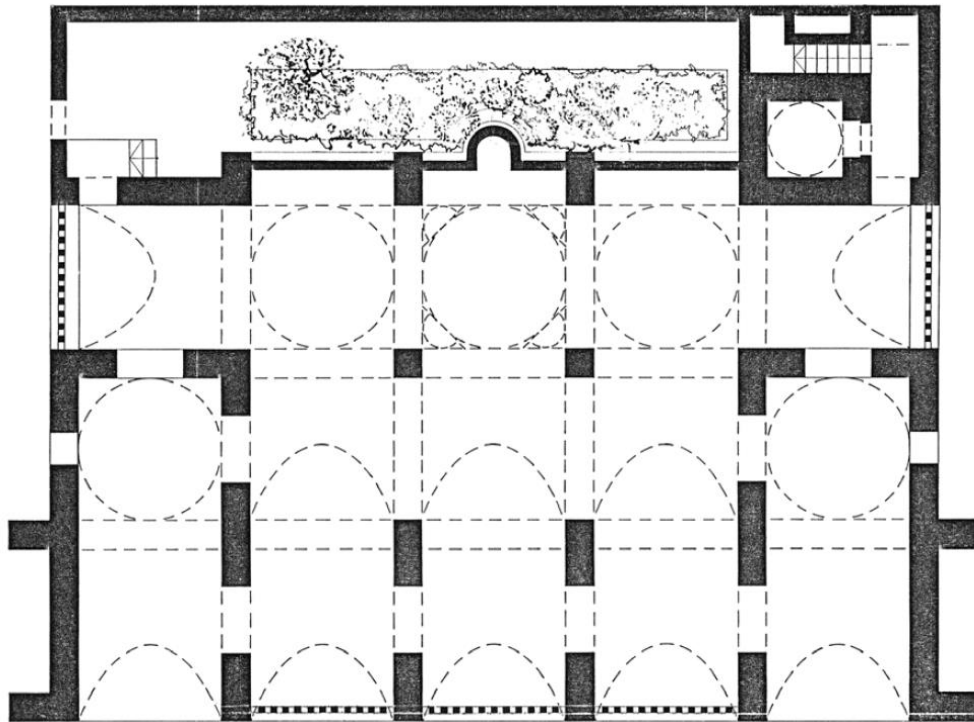
Figure 6.17a: The floor plan of the Ruwais mosque. Source: (Ruwais Mosque On-site Review Report, edited by Aga Khan Award for Architecture, 1989).

This implementation of the catenary vaults in the mosque, was inspired by Fathy's Souk design, in the new Bariz project, Egypt 1967 (Figure 6.18). On the west side elevation, the two layers of the vaults with the domes in the background creates a visual impression of harmonious transition of the building's mass structures, adding to the mosque a modern expression.

The structural forms of the vaults are inspired by the Nubian vernacular architecture, whilst the domes are Mamluks in their design. El-Wakil has described the Ruwais mosque as a mosque that can 'express a contemporary vernacular free-style of rural architecture' (Aga Khan Award publications, 1988, p.)

Figure 6.17b: Axonometric view of the Ruwais mosque. Source: (ibid).

Figure 6. 18: Souk, New Bariz, Egypt, 1967, air inlets. Source: (Steel, J, 1988, p. 16).

6.6 Yateem mosque analysis:

6.6.1 traditional architecture of Bahrain: brief overview

The traditional architecture of Muharraq in Bahrain was discussed in chapter four. Seyadi mosque was presented as model of the Bahrain traditional mosque architecture. (refer to chapter four).

Since the Yateem mosque in Bahrain is categorised as a small mosque, the comparison analysis will be confined with similar mosque categories, such as the Corniche mosque; the island mosque and the Al-Ruwais mosque. (Figure 6.19) These mosques which are similar in size; sculptural evoking structures; a source of private financing and formal composition, differ with the Yateem mosque in terms of cultural context. While these three mosques, mentioned above located in the Hejaz region at the west side of Arabian Peninsula, a region in which its architecture was influenced by Egyptian, Ottoman and other cultures, Bahrain architecture, in contrast, was subjected to a different culture and influences that played a role in shaping its traditional mosque architecture.

Figure 6.19: view of Yateem mosque. Source: (photo by the author).

The analysis of the Yateem mosque's architectural and spatial languages will aim to study how El-Wakil responded to these cultural differences, by questioning what were the architect's approaches in the designing of the mosque. Did he - and to what extent - evoke any references to the old mosques of Bahrain in the Yateem mosque's spatial or visible elements, such as a courtyard, a Riwaq, a minaret or a dome? And, finally, what is the architectural language of the mosque? To address these questions, firstly, a look at the urban context of the Yateem mosque site will generate an understanding of the mosque's formal composition and spatial layout, which later will be examined in-depth, reflecting on the Corniche, Binladen, the Island and Al-Ruwais mosques.

6.6.2 The urban context

The land was originally set to be used for a petrol station but the owner, Mr. Hassan Yateem, decided to donate the land for the purpose of building a mosque, it was then he contacted El-Wakil and commissioned him to design the mosque. Mr. Yateem did not have any design preferences, which gave more freedom to the architect. (Figure 6.20).

The mosque is located in close proximity to Bab Al Bahrain, which means literally the 'Gateway of Bahrain', an old monument designed by Charles Belgrave in 1949, located in Customs Square and contains a traditional market place. It is also shadowed on the eastern side by the Bahrain Telecommunications Company's building tower (Figure 6.21).

Yateem mosque is located in a closed environment compared to the three mosques of Island, Corniche and Ruwais located at the sea front in Jeddah, which led to limitations in the design capacity of Yateem mosque. In addressing the design options, El-Wakil had to deal with the following factors: firstly, the layout (irregularity) and position of the land; secondly, the size of the land and thirdly, the proximity of the surrounding buildings. These factors compelled El-Wakil to alter some of the mosques' main spatial components. For example, the mosque was designed without a front courtyard, connecting the entrance to the main prayer hall, which was a typical characteristic of old traditional Bahraini mosques. El-Wakil (2012) argued that it was a challenging task to build a mosque in a relatively small land space that is positioned in a corner plot. However, in order to address this, he utilised all of the land's allowable footprint area to build the structure of the building to reach its maximum allowable utilisation.
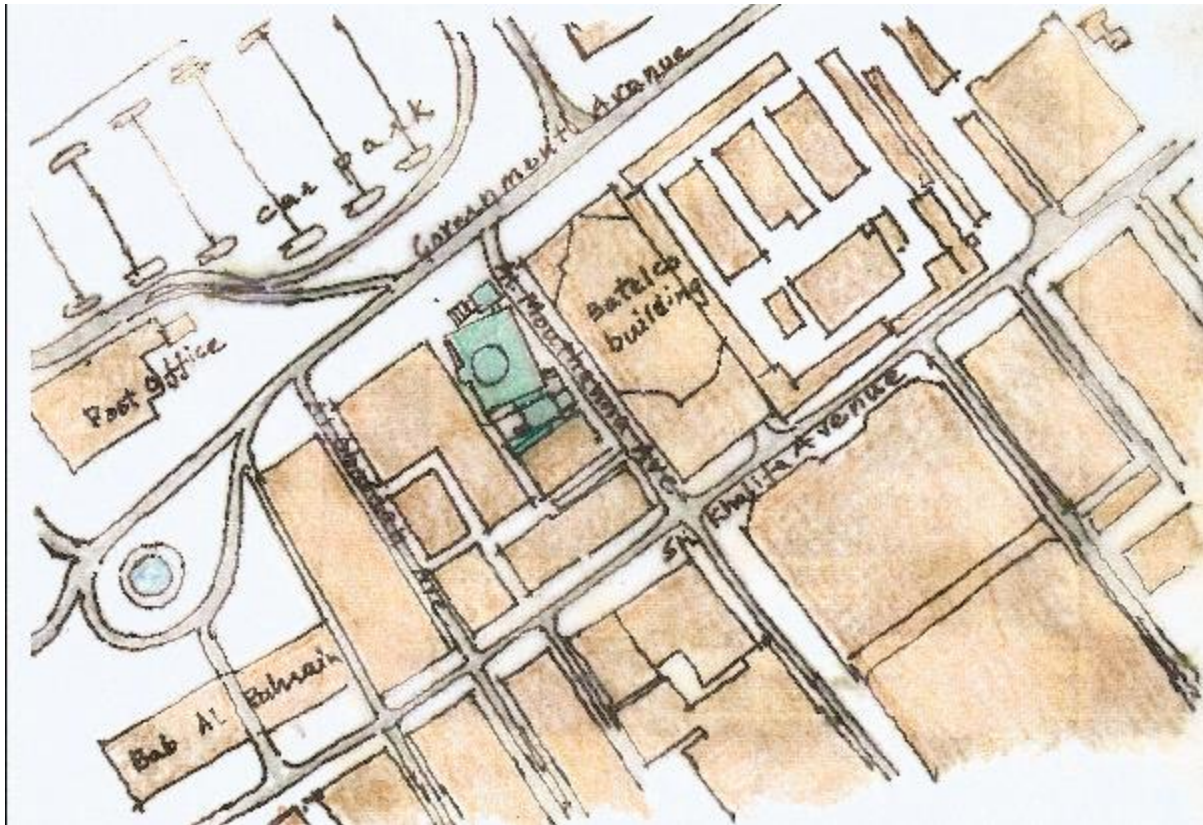
Figure 6.20: location of Yateem mosque. Source: (drawing by the author).

The design of the mosque with its prominent dome and its square-shafted minaret, gives it a landmark status among the surrounding buildings and congested area. And at the same time the fact that the neighbouring buildings at the south and eastern sides of the mosque were attached to the mosque's elevations asserts the continuity of the mosque with its urban context (Figure 6.22a, 6.22b). It also exhibits the architect's attempt to integrate the mosque with its surrounding urban fabric.

Figure 6.21: Aerial view of the Yateem mosque. Source:(photo by the author).

Some of critics of El-Wakil's work, such as Al-Asad (1992, p.36) claimed that 'Even though, El-Wakil seems to have carefully examined structures belonging to the Islamic architectural heritage, he does not give the same detailed attention to the relationship between these structures and their urban surroundings'.

Al-Asad's criticism can apply to the aforementioned four selected mosques in Jeddah, which can be described as free standing structures that possess sculptural quality. The mosque of Yateem, in contrast, synthesises with its urban context. Showing that this criticism does not

stand true in all of El-Wakil's mosques. Chris Able (1992) responded to Al-Asad's argument by highlighting three case examples of El-Wakil's mosques, being: The Qiblatayn, Bilal and Yateem mosques, where 'These are all closely integrated with their respective neighbourhoods'. (Al-Asad, 1992, p.6-8)
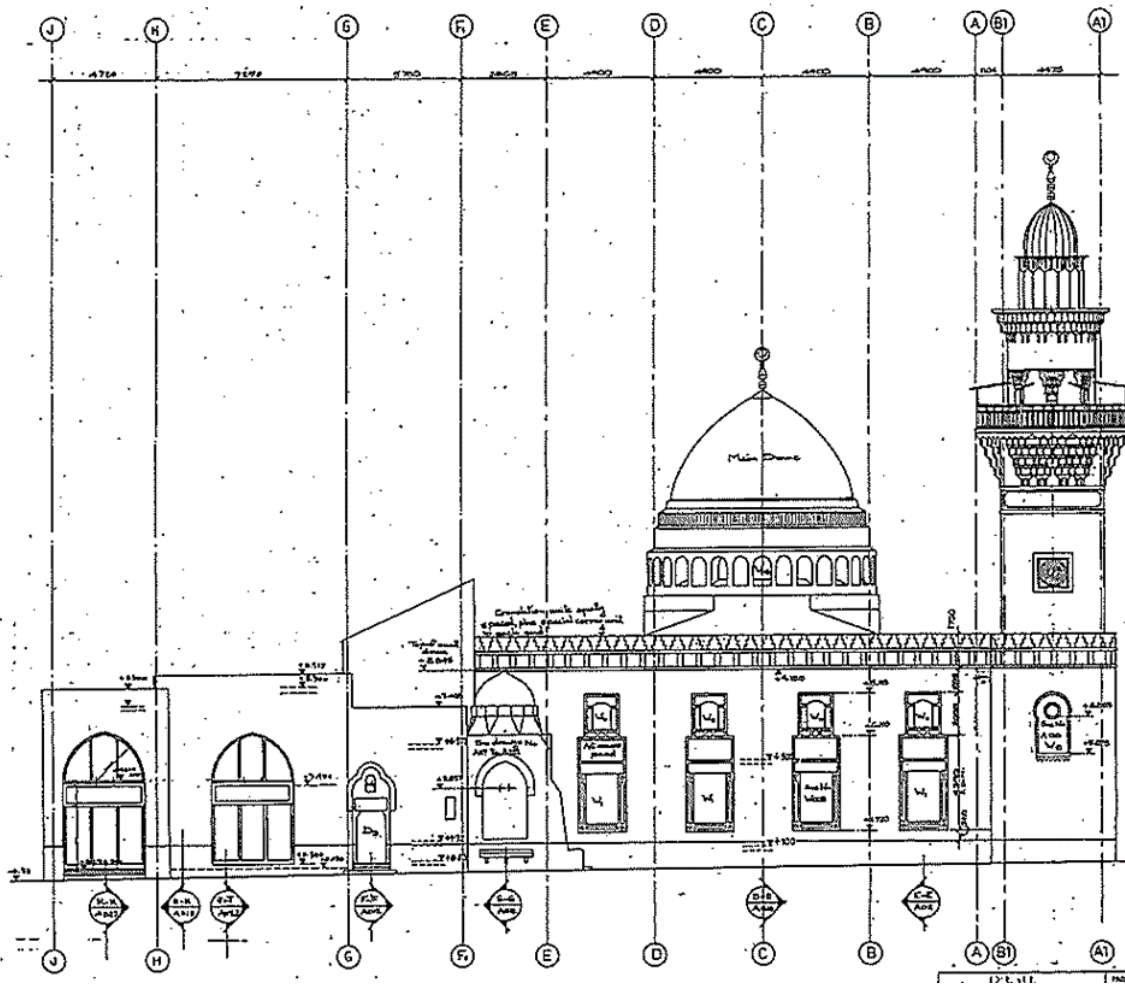
Figure 6.22a: Northeast elevation of Yateem mosque. Source: (MSCEB Architects and engineers, 2015).

Figure 6.22b: A view of the northeast elevation of the mosque. Source: (photo by the author).

6.6.3 Yateem mosque's architectural composition and language:

The building is composed of: the main prayer hall; women's gallery at the mezzanine level, with a separate entrance with its own ablution and toilet facilities on the ground floor, accessible directly from the women's main entrance.

Figure 6.23: The main entrance to the right, and the northeaster entrance to the left. Source: (ibid).

There are two main entrances for men: one from the main road opening into a small foyer with a high ceiling covered by a hexagonal dome. The other entrance is located on the north-eastern side street next to the women's entrance, it also opens to a small foyer with a high ceiling covered by a smaller dome. This entrance leads to a main prayer hall and also leads through a corridor on the left to the men's ablution facilities. (Figure 6. 23).

A fourth entrance is accessible from the main street through a small door close to the main entrance, which leads to the courtyard and the men's ablution and the keeper's accommodation. The keeper accommodation is accessed from the courtyard through a staircase leading to the mezzanine level, made up of a bedroom, a living room, a kitchen and a bathroom.

Figure 6.24: Main prayer hall with a view of women gallery at the mezzanine level. Source: (ibid).

The mosque's spatial layout represents a strong inward orientation, similar to El-Wakil's four selected mosques in Jeddah. The main prayer hall, is square in shape and covered by a central dome of 8.64 metres in diameter, and a height of six metres. (Figure 6.24) The dome is built with the same construction methods and materials that El-Wakil used in the majority of his mosques. The construction of the dome was mainly of bricks without the use of cement. The interior of the dome was left exposed with its traditional red brick colour, as well as all of the domes in the mosque. (Figure 6.25) There are eight, smaller, shallow domes surrounding the central dome: a design layout that is similar to the Binladen mosque.

Figure 6.25: the interior of the dome showing the red bricks and the chandelier. Source: (ibid).

The square-based minaret has a balcony supported by muqarnas with wooden rails. The top of the balcony is decorated with similar structural forms of muqarnas, with the last decorations of the minaret located on top of the minaret's dome base above the ring of window openings. (Figure 6.26).

Figure 6.26: a close view of the minaret architectural details. Source: (ibid).

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While the design of the dome is inspired by Ottoman architecture, the minaret, on the other hand, is taken from Mamluks architecture; it recalls the one in the Al-Ashraf Barsbay mosque and the mausoleum in Cairo, built in 1432 (Figure 6.27). The similarities between the Yateem mosque minaret and al-Ashraf minaret, can been seen in the square-based, octagon-shaped balcony and the design of the vaults.

The concave mihrab, framed by two columns on each side, was placed under the dome in the centre of symmetrical composition of the prayer hall. A spatial arrangement in which El-Wakil

(2012) argued is the correct arrangement to position the mihrab within the prayer hall, a spatial organisation which he emphasised in all of his mosque projects (Figure 6. 28).
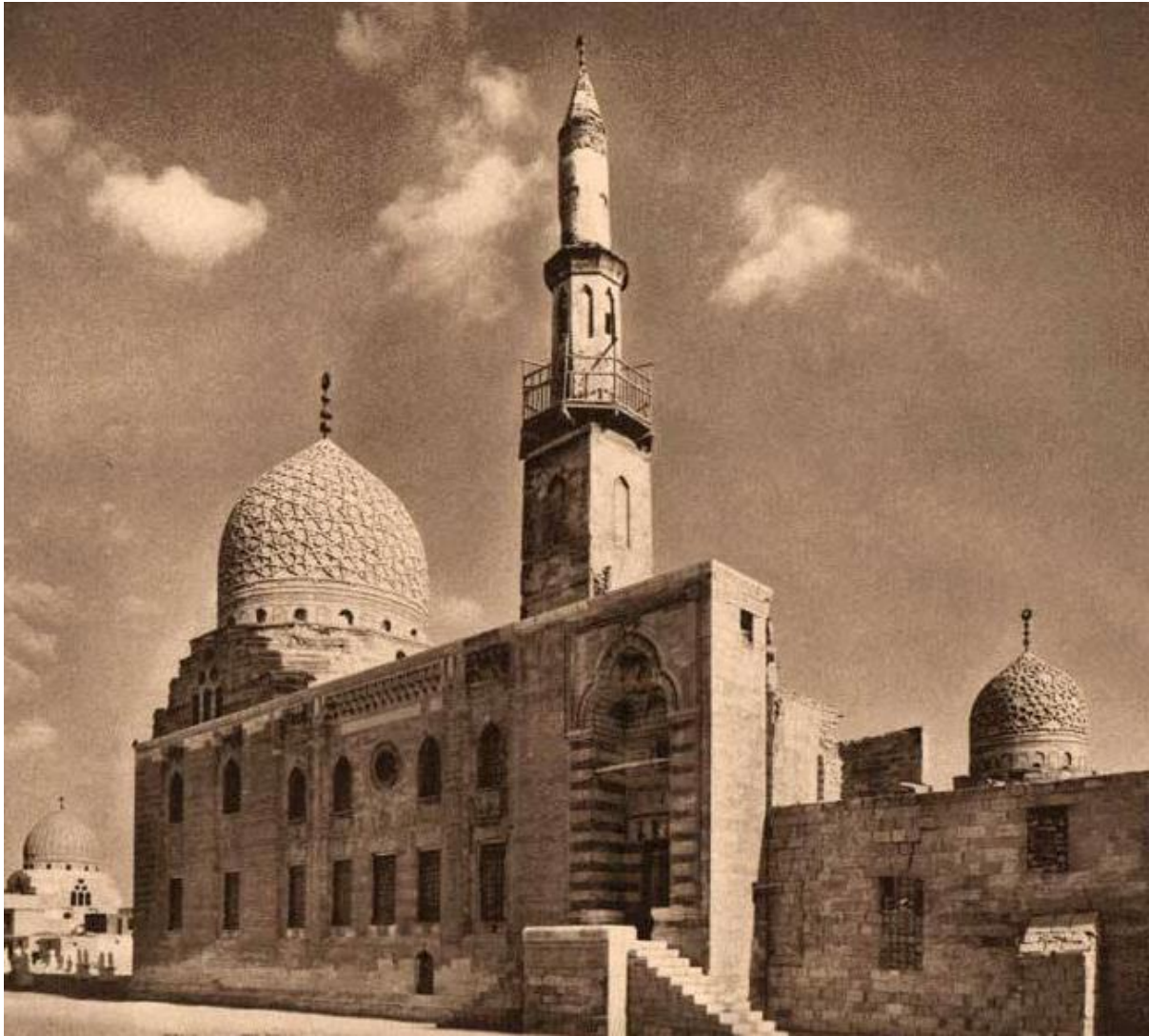
Figure 6.27: The Al-Ashraf Barsbay mosque and the mausoleum in Cairo. Source: (archnet.org).
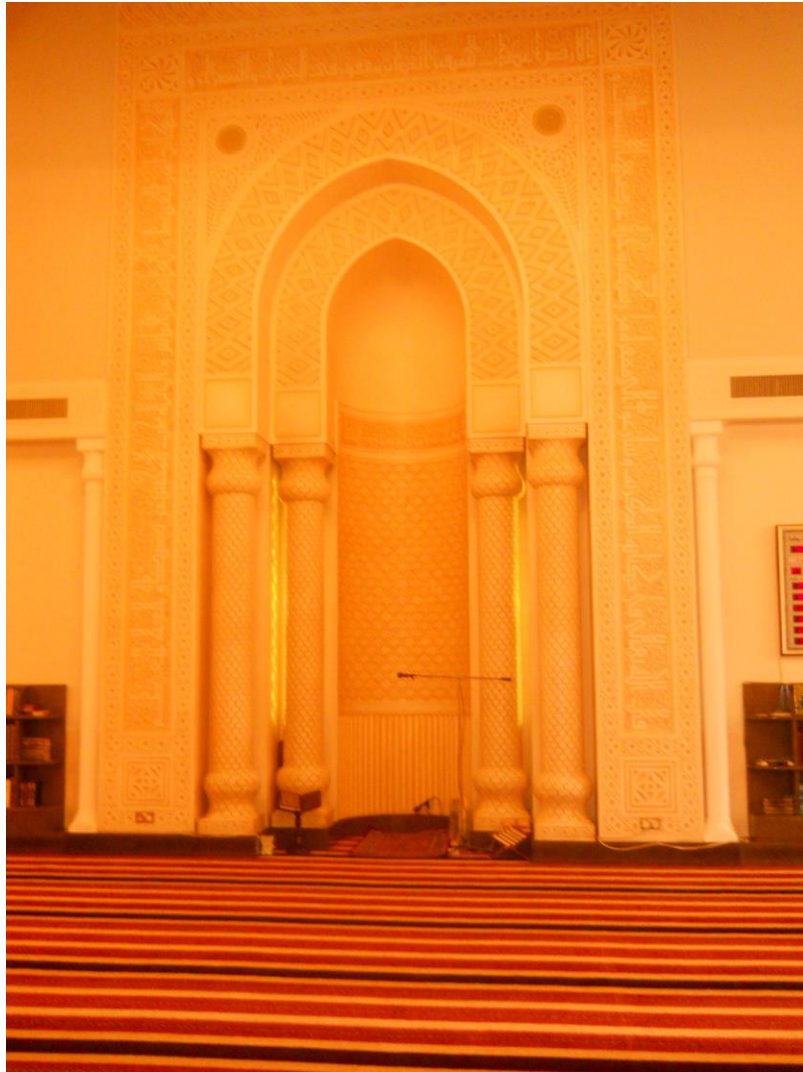
Figure 6.28: view of the mihrab. Source: (photo by the author).

6.6.4 The spatial analysis of the Yateem mosque

The Yateem mosque appeared to be more complex compared to the four selected mosques, with regards to its spatial organisation and urban setting. The mosque's analysis will be based on six categories, which are classified by their spatial significance (Figure 6. 29a,6.29b), as this represents the mosque's entry points; movement orientation and transitional spaces.

	Eexternal space		Transition space		Prayer area		Courtyard		functional area		Imam area

PRAYER HALL

courtyard

N
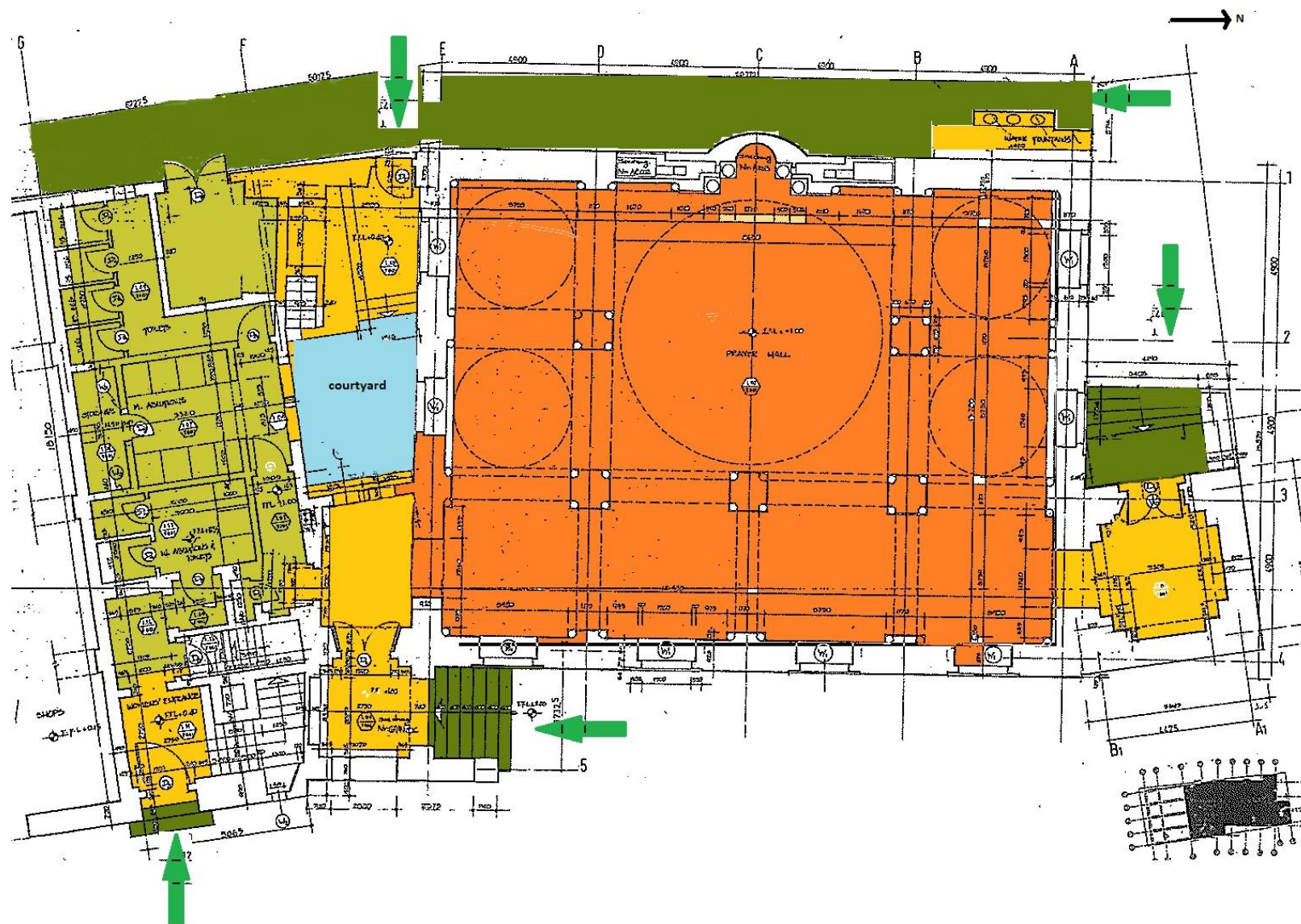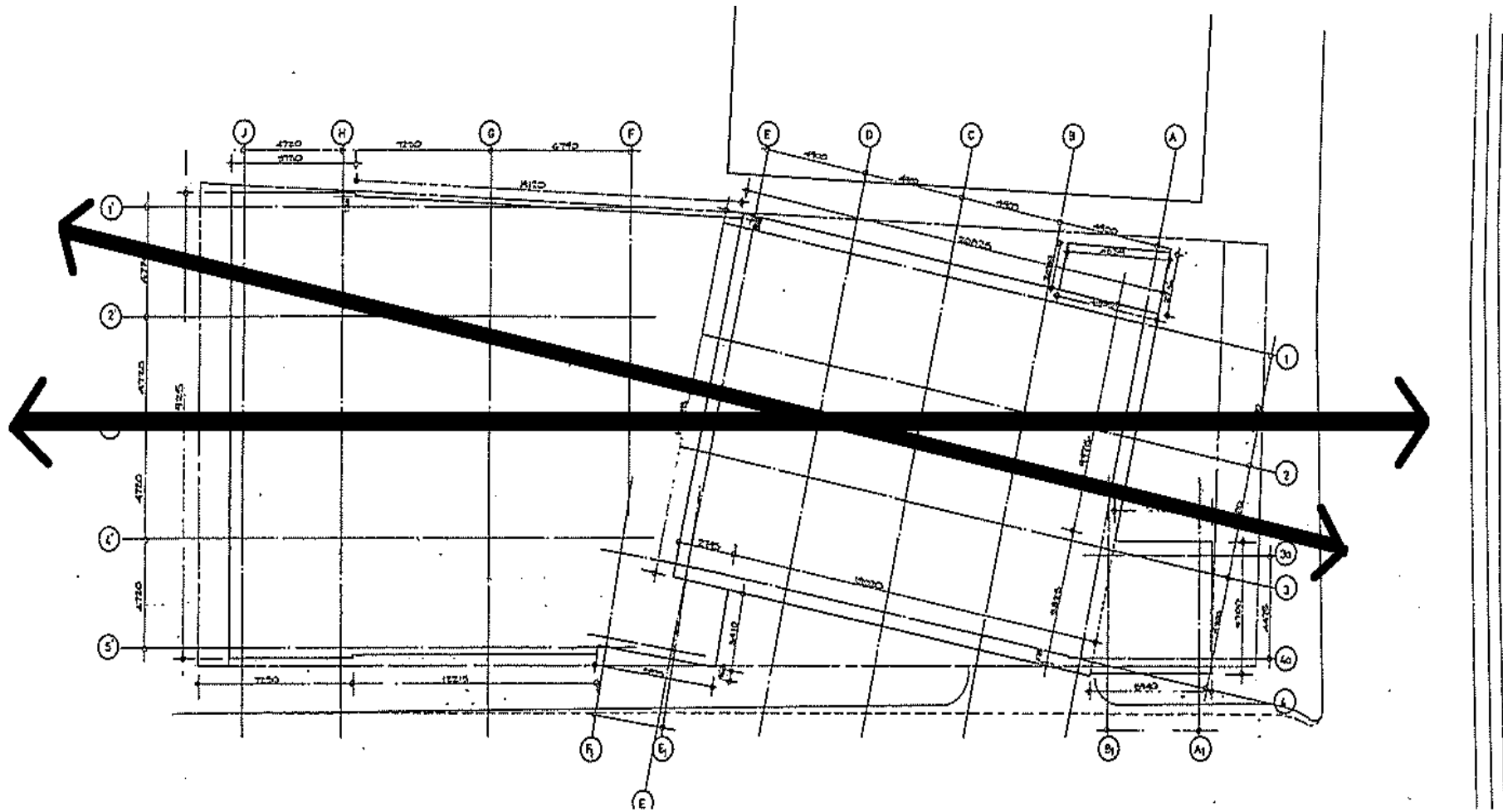
Figure 6. 29a: Ground floor plan of the mosque with space categories indications. - Figure 6.29b: Diagram showing the arrangement of the mosque's spatial organisation around two different axes.

The first category is the external spaces which includes the granite stair steps leading up to the gates, and the corridor at the west side of the mosque. There are four entrances; three male entrances and one entrance for females, the orientation of the main entrance is in alignment with the pavement and the street. However, the number of the entrances for a mosque that is not serving as a Friday mosque is an indication of the architect's approach, in allowing the best possible accessibility from the two sides: the main road and the side road. While the main entrance directs the worshipper to the prayer hall through a foyer this, however, does not explain having two additional male entrances, both leading to the ablution facilities and the prayer hall.

The second category, is the transitional spaces which can be broken down into four sub-categories, as follows:

- The transition foyer, leading to the main prayer hall.

- The transition foyer that opens into the female ablution facilities and to the staircase which leads up to the female prayer gallery at mezzanine level.

- The transition space that opens into the courtyard and to the staircase leading up to the keeper's accommodation.

- The transition arcades connecting the courtyard to either the men's ablution facilities or to the main prayer hall.

The foyer acts as a transitional space between the street and the building's interior. It is also a space that provides privacy and noise reduction. The sequence of movement from the gate to the prayer hall is indirect as it is controlled by the foyer space, which is a spatial arrangement first introduced in the mosque's design by the Mamluks. Howayda Al-Harithy (2001) stated that:

Mamluks also developed an indirect entrance as part of the transitional space. It was either bent, as in the residential architecture of Fustat, which continued to be use in the Tulunid and Fatimid houses and palaces until the Mamluks period, when it was adopted for use in socioreligious complex (Al-Harithy. H. 2001. p.86).

The third category, is the prayer hall with a mihrab, built in the centre of the Qibla wall, and the rows arranged in proportion with the five columns of the prayer hall. The most elaborate sequence of movement is found in spatial space of the prayer hall and it is the user detachment from the outside world at one level and worshiper's orientation towards the Qibla wall on another level.

The fourth category, is the inner courtyard, it acts as a transitional space between the east side male entrance; their ablution facilities and the west entrance. The location of the inner courtyard represents a spatial unit that allows for transition from the side road at the east side and the corridor at the west side into the interior without intruding on the internal order of the mosque's main spatial composition (the prayer hall and the female gallery).

The fifth category, is the functional areas, as in the male's and female's ablution facilities, storage, electric room, keeper's accommodation.

The sixth category, is the imam's area, which can be confined into the mihrab area only, as the Yateem mosque does not have a minbar which is only required for the sermon prior to the Friday noon prayer. The mihrab is in a linear dimension with the prayer hall, indicating the direction to the Kaaba. The dome is placed above the mihrab and expresses the centrality of the mihrab a spatial unit and the prayer hall space.

6.7 Conclusion

El-Wakil's reliance on a wide variety of traditional vocabularies, including the Mamluks, Egyptian, Persian and Ottoman is evident in all of the five mosques discussed in this chapter. He often uses one or more of these elements in one mosque. (Table 6. 30) El-Wakil himself (1998) described his approach in the letter to the Aga Khan award: 'in each project ideas and various elements were applied in order to introduce a variety of architectural expression and construction techniques, achieving a comprehensive vocabulary within the scope of traditional architecture'. (El-Wakil, 1998, p.6).

Although El-Wakil reinterpreted the traditional mosque in a contemporary context, he has not reflected the local architecture of the traditional mosques of Hejaz or Bahrain. In my interview with him (2012), I asked him a question: 'To what extent did he apply the local architecture of Bahrain into the Yateem mosque's architectural design?' He replied, 'I have integrated some of the motif patterns of Bahrain traditional architecture into the mosque's decoration, as in the entrance craved portal and mihrab'. His answer indicates that he did not take into account the architectural forms or the spatial organisation of the old Friday mosque of Bahrain. (Figure 6.31).

Comparative analysis of El-Wakil's mosque architectural resemblances

Name of the mosque	minaret	dome	Arches and windows
corniche	Guyshi mosque-Egypt	Mamluks	Egyptian
Island	Egyptian	Persian	Traditional Arabian
Ruwais	Traditional Arabian	Cairene Mamluks	Vaults used for ventilations, resembles the Nubian vernacular architecture.
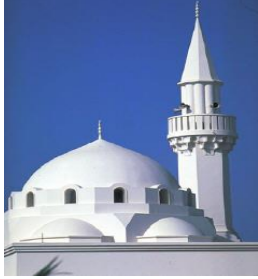
Binladen			
	Ottoman	Egyptian	Persian
Yateem			
	Egyptian	Ottoman	Persian

Table 6.30: Comparative analysis of El-Wakil's mosque architectural resemblances.
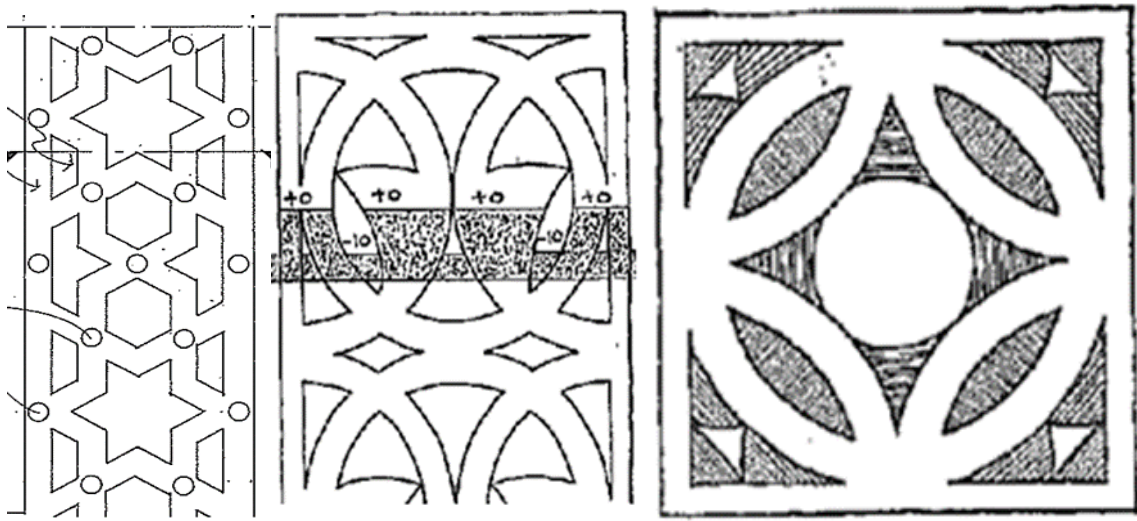
Figure 6.31: Motifs design in Yateem mosque. Source: (MSCEB architect and engineers, 2015).

CHAPTER SEVEN

THE MOSQUE OF RASEM BADRAN: A CONTEMPORARY-REGIONALIST APPROACH

7.1 Introduction

Chapter seven is dedicated to study the work of the Jordanian architect Rasem Badran. It will provide an analytical study of the Imam Turki Bin Abdullah Friday mosque in the city of Riyadh in Saudi Arabia, also known as the Qasr Al-Hkoum mosque which, in Arabic, literality means 'the mosque of the governor's palace'. This mosque was built during the second phase of the development planning program of the ruler's administrative district, located at the core of the city of Riyadh, wherein the program covered the period from 1976 to the late 1990s - split into three phases.

The chapter will explore Rasem Badran's philosophy, vision and approaches to mosque architecture. Also, it will aim to answer the questions of how Badran responded to the local architecture and traditions, and what were the architectural and spatial languages that he adopted in order to address the complexity of the organic urbanism of the project site.

Although, the Qasr Al-Hkoum is the main case study of this chapter, several mosques designed by the architect, are selected as sub-case studies, based on three factors: firstly, their architectural significance in relation to each other; secondly, their design sensitivity to the urban context and, thirdly, their location. These mosques are The King Abdul Aziz Mosque in the Kharj city of Saudi

Arabia; The Mosque of Ali Bin Abi Talib in the Doha city of Qatar and the State Mosque of Baghdad in the city of Iraq. The analyses of these mosques will be used as a background in order to provide a deeper perspective into the analysis of the Qasr Al-Hkoum mosque by a comparative approach. It will also aim to generate an insight into Badran's theoretical framework and his design vocabulary.

The analysis of the Qasr Al-Hkoum mosque will address the architect's response to the mosque's socio-political aspects and the urban context of the Qasr Al-Hkoum district complex which includes: the administrative offices buildings of the ruler's palace, *Sahahat* or plazas; the library; the shopping malls and units, in addition to the remaining parts of the old city's boundaries walls and gates. The analysis will look at the spatial characteristics and layouts of the mosque and its relation to the surrounding spaces within the district area.

The chapter will start with a brief profile of Badran's education, career and achievements, followed by brief examination of the selected mosques mentioned above, which will generate an understanding of Badran's approaches and vision. The analysis framework is supported by the field work conducted between February 2012 and October 2015 which included a long interview with Badran in the Amman city of Jordan, which lasted for more than four hours and included a site visit to the Abu- Ghazaleh mosque, built in 2008, in addition to the study of photographs and drawings in Badran's archives.

7.2 Rasem Badran's profile: education, career and achievements

Rasem Badran was born in Jerusalem in 1945. His father, Jamal, was a well-known Figure in the world of Islamic art, and had influenced Badran's artistic sense and expression. His father had 'worked on the renovation of Al-Aqsa mosque in 1928. In 1968, he remodelled the minbar of

Salahuddin Al-Ayyoubi as well as doing part of the decorative work on the dome of the Rock' (Akram, 1987, p. 25).

Following his graduation from the Technical University of Darmstadt in 1970, Rasem Badran worked with a group of German architects on the designing of the visitor service facilities for the Olympic stadium in Munich. After which, the team were invited to participate in a competition to design a low-cost housing project and won the first prize among 250 entries: the project was built in Goldstein near Frankfurt (Kultermann, 1991, p. 39).

After Badran returned to Jordan, he designed his first residential project in Amman city for the Khoury family residence and he stated that 'this small house introduced me into the region, it was in the year of 1973. My father was also involved in this house; he is the one who did the ornamental decoration' (Badran, 2012). In his interview with Mimar (1987, p. 52) he commented that 'some critics have viewed the Khoury residence as turning point in contemporary Jordanian architecture' Also, it attracted more families in Amman to Badran's work, where he received more commissions to design their residences, as in the Villa Madi and the Villa Handal.

The second turning point in Badran's career was in 1982, when he won the first prize on the design of the state mosque of Baghdad, among 16 other entries including Robert Venturi, Mohamed Makiya, Ricardo Bofill and other international and Arab architects and firms. In 1995, Badran also received international recognition by winning the Aga Khan award for the design of the great mosque of Riyadh and the re-development of the old city centre. This achievement marks the third turning point in Badran's career. During the interview, Badran (2012) described this achievement as follows:

> This mosque is the first to win the Agha Khan award, by unanimous vote. And the first contemporary mosque to win the awards as well. Because the other wining mosques were more of imitation of something,

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or inspired by tradition. But this mosque is a contemporary expression on how to conceive the mosque within the contextuality frame work.

The jury commended Badran 'For having sensitively recreated the city core in an urban and architectural language that reinterprets the traditional heritage in a contemporary scale, technology and materials to meet contemporary needs in a most effective manner' (Steele, 1995, p. 45).

Furthermore, he won many other international design competitions, including first place in the design of the museum of Islamic art in Doha, Qatar in 1997. The competition was coordinated by the Aga khan trust of culture and, with 81 entries, the short-list included only 6 architects, including Rasem Badran, Charles Correa, Zaha Hadid, Richard Rogers, James Wines and Oriol Bohigas.

While interviewing Badran (2012), he recalled his experience in the Baghdad state mosque as

> The first experience where I utilised all of what I wanted to express on how to redefine the concept of worshipping place; I built a matrix that read the history intellectually not literally; the aim is to reach a result, to produce readings and draw lessons into the intellectual, scale, values, and the *Spirituality* of the place dimensions, not the physical implications.

This methodology of creating an architectural narrative was consistently adopted in Badran's work: an approach he emphasises in his projects, connecting the building in a dialogue with its memory and history. In interview Badran (2012), expanded on the importance of this competition in developing the language of the contemporary mosque:

The state mosque of Baghdad provided me with an opportunity on how to view the mosque from different aspects, and in which way I can generate a contemporary intellectually theoretical framework. All of my projects are a production of what is called 'the local language and intelligence of the place', every place has its own matrix, a place; which throughout the years

witnessed events; you compose a story of this place in order to create its spatial organisation and identity.

This narrative approach played a major role in all of the selected mosques in this study, and the analysis will aim to investigate how Badran applied this approach into the design of the mosque and its urban context.

7.3 The sub-case study: specifications and limits

The three mosques vary on the level of scale, location and architectural expression (Table 7.1) while the state mosque of Baghdad; the mosque of Ali bin Abi Talib in Doha and the King Abdul Aziz mosque in AlKharj were all the winning mosque designs in international competitions and the first two projects have never been built. On other hand, the King Abdul Aziz Mosque in AlKharj, was built in 1998 and was commissioned by The High Commission for the Development of Arriyadh to replace the old mosque that was demolished.

The reasons of selecting these three mosques relies on the following factors: a) the architectural relationship between the state mosque of Bagdad and Ali bin Abi Talib mosque to the Qasr Al-Hkoum mosque. This point was explained by Badran (2012), when interviewed that:

> The state mosque of Baghdad was my gate to the Qasr Al-Hkoum mosque in Riyadh. It was in 1984 when I first visited Riyadh after I have been invited to design the grand mosque of Riyadh by the High Commission for the Development of Arriyadh authority. And due to the similarity of the climate of Riyadh and some of the regions of Iraq, I came to the realisation that I can use the experience I have gained in the designing the state mosque of Baghdad, not in remodelling this experience, but through the process of adaptation in order to accommodate the local desert environment of Saudi. This is why I found the relationship between the state mosque of Baghdad and Qasr Al-Hkoum is very strongly attached.

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The experience that Badran referred to in his statement is a reference to his approaches while designing the State Mosque in Baghdad, in which he began to view the mosque as an architectural structure through different domains; the environmental balance; the socio-political aspects; understanding the urban context and also the cultural background of the place. Through his experience in Baghdad, Badran (2012) created what he called 'Iraqi architectural laboratory', in which he developed the tools of building an intellectual program of analysing the mosque's design theme to achieve an architectural language of the mosque that meets the design requirements and, at the same time, reflect its architectural and regional character. The state mosque of Baghdad will be examined further in the chapter to elaborate Badran's views and statements above.

Name of the mosque	Client	location	Year of construction	Total area m2	Estimated cost	Architectural expression
King Abdul Aziz Mosque.	Riyadh Development Authority (ADA).	AlKharj, Saudi Arabia	1996-1998	7000	$. 6,000,000	Contemporary regionalist expression of traditional Najdi architecture
Ali Bin Abi Taleb Mosque.	The Ministry of Endowments and Islamic Affairs "Awqaf"	Doha, Qatar.	Never built	-	-	Contemporary regionalist expression of traditional Qatari architecture
State Mosqe of Baghdad.	Municipality of Baghdad.	Baghdad, Iraq.	Never built	30,000	-	Contemporary regionalist expression of Abbasid- Persian Architecture

Table 7.1: The three sub-case studies designed by Badran and their architectural expressions.

7.3.1 The state mosque of Baghdad, 1982-1983

In 1982, 22 architectural firms - including Arabs and international architects - were invited to submit their pre-qualifications documents, in order to participate in a closed and limited competition for the designing of the national state grand mosque of Baghdad. In September 1982, the organising committee sent the information and the architectural requirements in respect to the grand mosque state of Baghdad to all of the 22 participants as quoted below (State mosque competition, Baghdad, 1983, p. 10):

a) Capacity of 30,000 persons.

b) Prayer area for female with capacity of 3,000 persons.

c) A yard for five prayers, with a capacity for 1,000 persons.

d) An open prayer yard with a capacity for 4,000 persons.

e) Main library with a capacity for 100,000 books and 50,000 MSS.

f) Car park with a capacity for 1200 cars and 120 buses.

g) Provisions of services and amenities, for 10 administrators, approx.

h) Provisions and amenities for 40 visiting Imams (prayer leaders).

i) Conference hall for 300 persons.

j) Conference hall for 800 persons, with a ladies' wing for a capacity for 200 persons.

k) A teaching institute with ten classrooms.

l) An Institute for teaching the holy Qur'an, with six classrooms.

m) Restaurant with capacity of 500 persons, with all the necessary kitchen equipment.

n) An arcade for the sale of religious publications.

The committee had selected 7 firms from the initial pool of participates to submit their design by January 1983, those seven were: 'Rasem Badran, Mohamed Makiya, Robert Venturi, Ricardo Bofill, Maath Alousi, Al-Madfai and Denise Scott Brown' (Khan, 1984. p. 44).

All of the selected competitors were invited to give a half-hour presentation of their projects at the symposium held in Baghdad in October 29-30, 1983. These two-day events ended by announcing publicly the winning design by Badran (Figure 7.2).
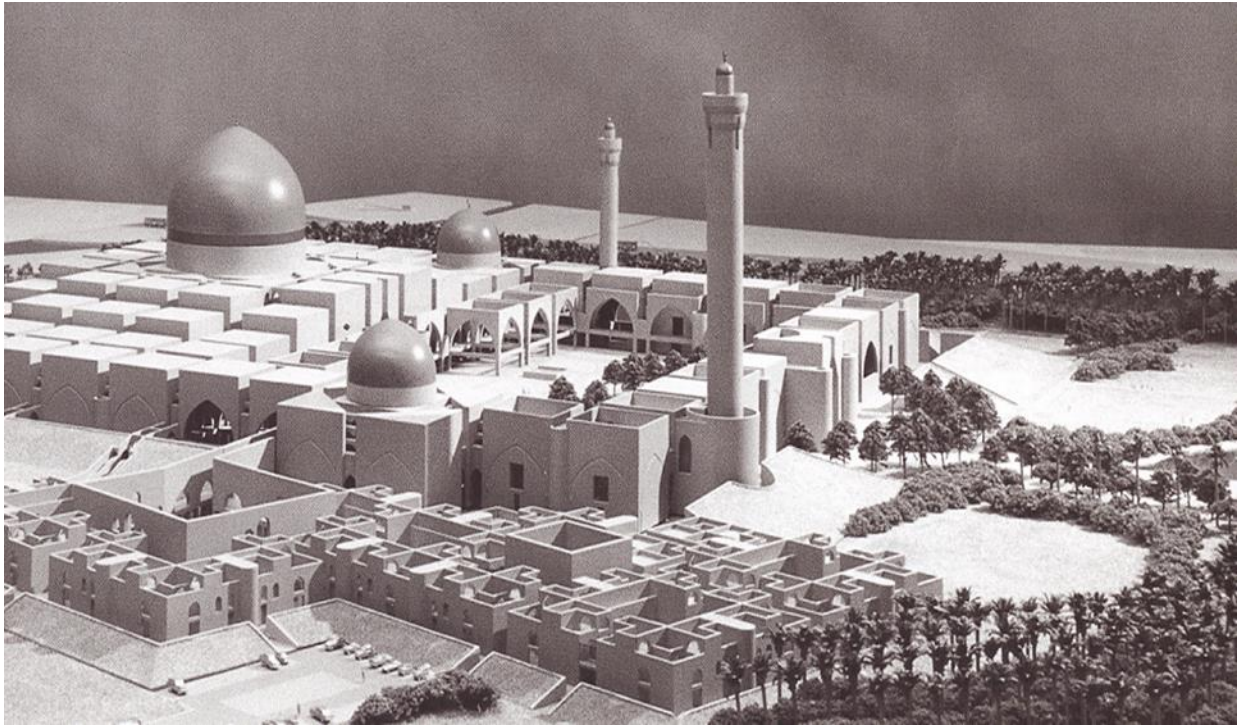
Figure 7.2: Model of Baghdad State Mosque designed by Badran. Source: (Steele, 2005, p.88).

Badran's design of the mosque followed the prototype of the Arabic traditional mosque that consisted of a rectangular shape prayer hall covered by a central dome and an open courtyard surrounded by a riwaq. However, there are two distinctive design factors in Badran's design of the mosque that was appealing to the committee - these are: a) the interplay between the Mecca orientation of the mosque and the different orientation of the other buildings of the complex; (Figure 7.3). b) The adoption of cube-shaped buildings units as spatial elements that form the main structure of the mosque and its corridors.
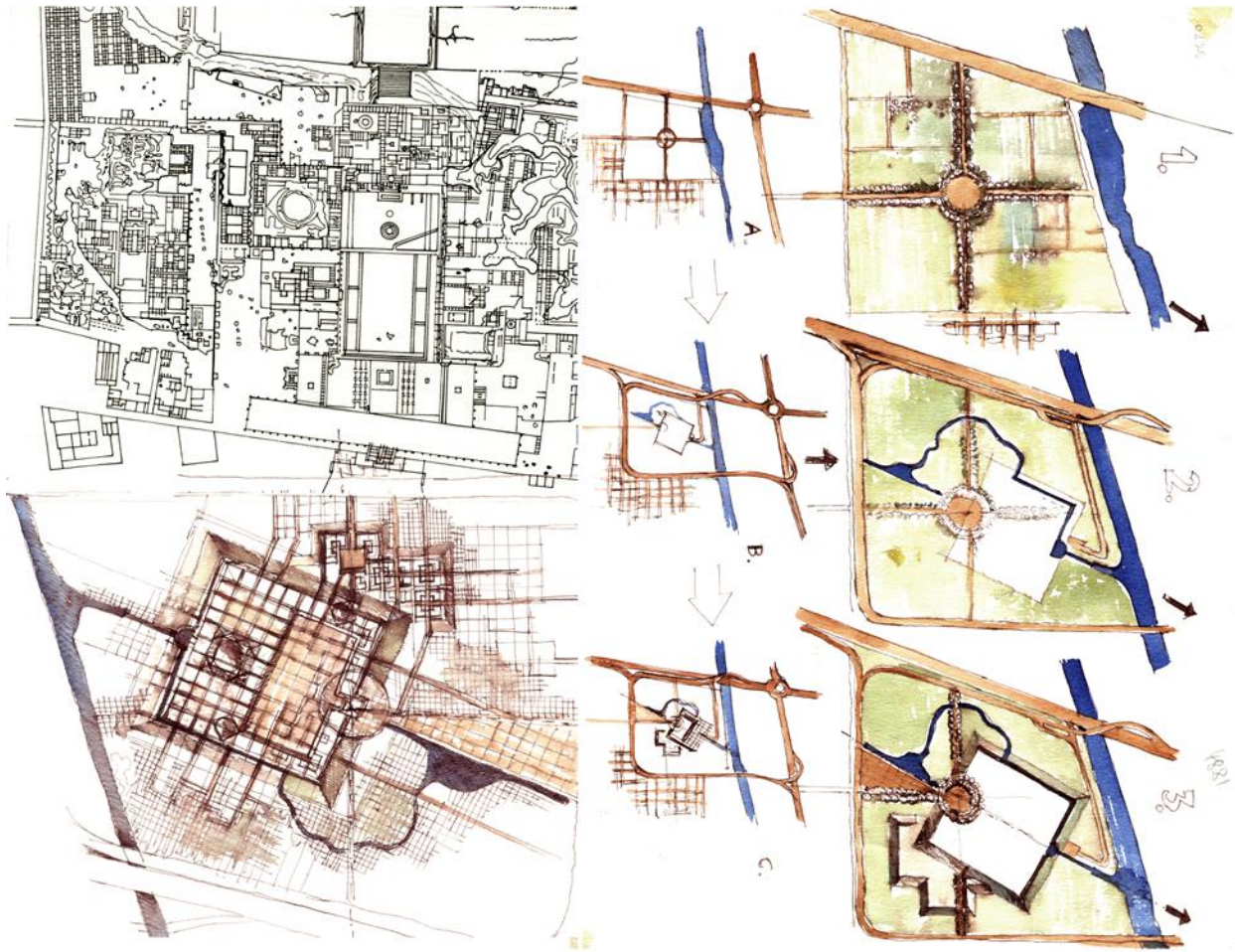
Figure 7. 3: The architect's drawings, showing his interplay between the Mecca orientation of the mosque and the different orientation of the other buildings of the complex. Source: (provided personally by Badran, 2012).

The architect faced two main issues in the design of the mosque, first, how to design a large central dome without overpowering the worshipper and in the same time to balance its size with the mosque complex as whole. To approach this issue, Badran decided to place a central dome over the main prayer hall, and to add two smaller domes; one at the corner of the mosque main building, and the other one over the daily prayer building at the east of the courtyard (Figure 7. 4).
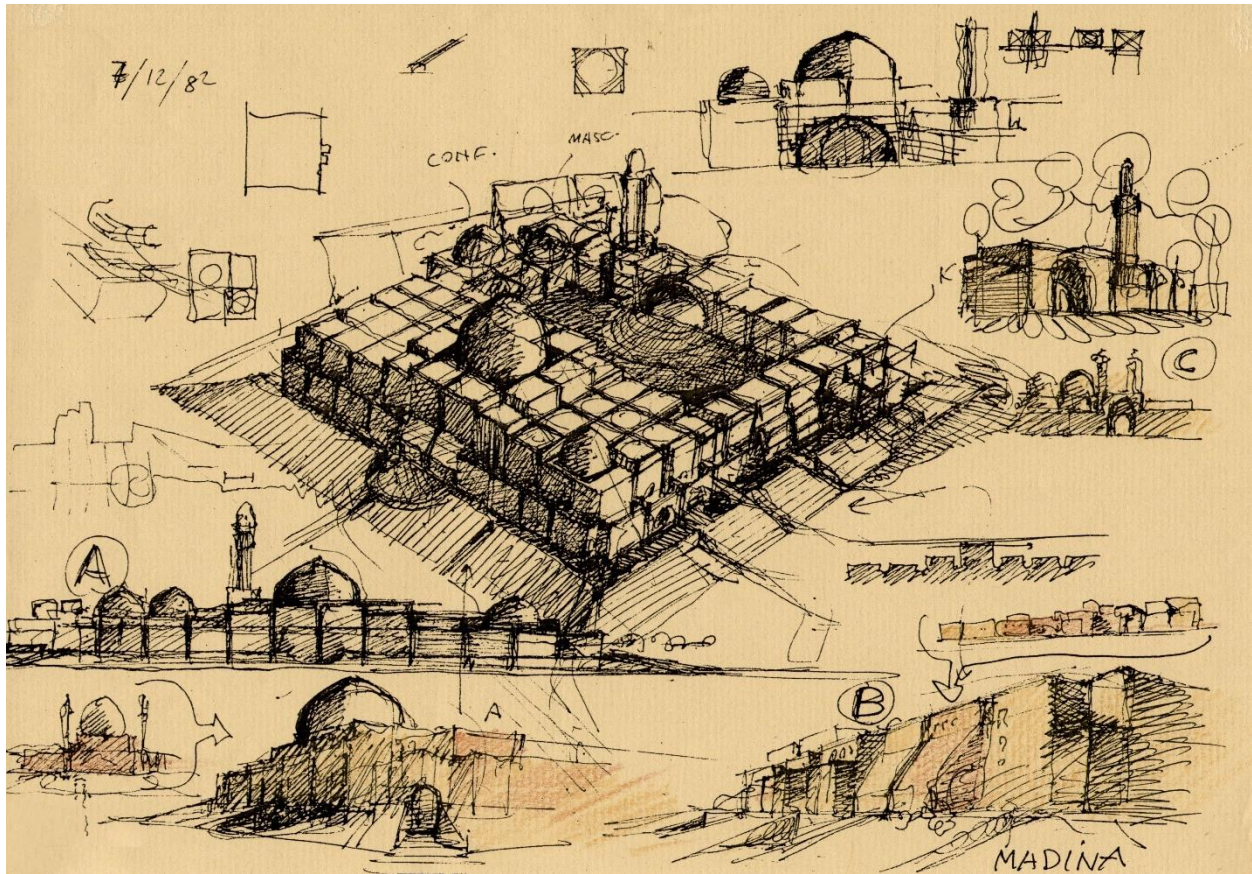
Figure 7.4: Badran's analytical sketches of the Baghdad Sate Mosque's domes and minarets. Source: (ibid).

Badran also, followed the same design strategy with minaret; he avoided having one single minaret and decided to place two minarets to the mosque complex, with the tallest minaret positioned at the north corner of the mosque. Looking at elevation drawings of the mosque, it represents the architect effective method of breaking down the monumentality of the project, where proportions and balance in scales of the minaret, domes and the buildings, was achieved through adopting two main design approaches; a) to create a platform as base for the mosque, b) to adopt a grid layout over the square footprint of the project (Figure 7.5).
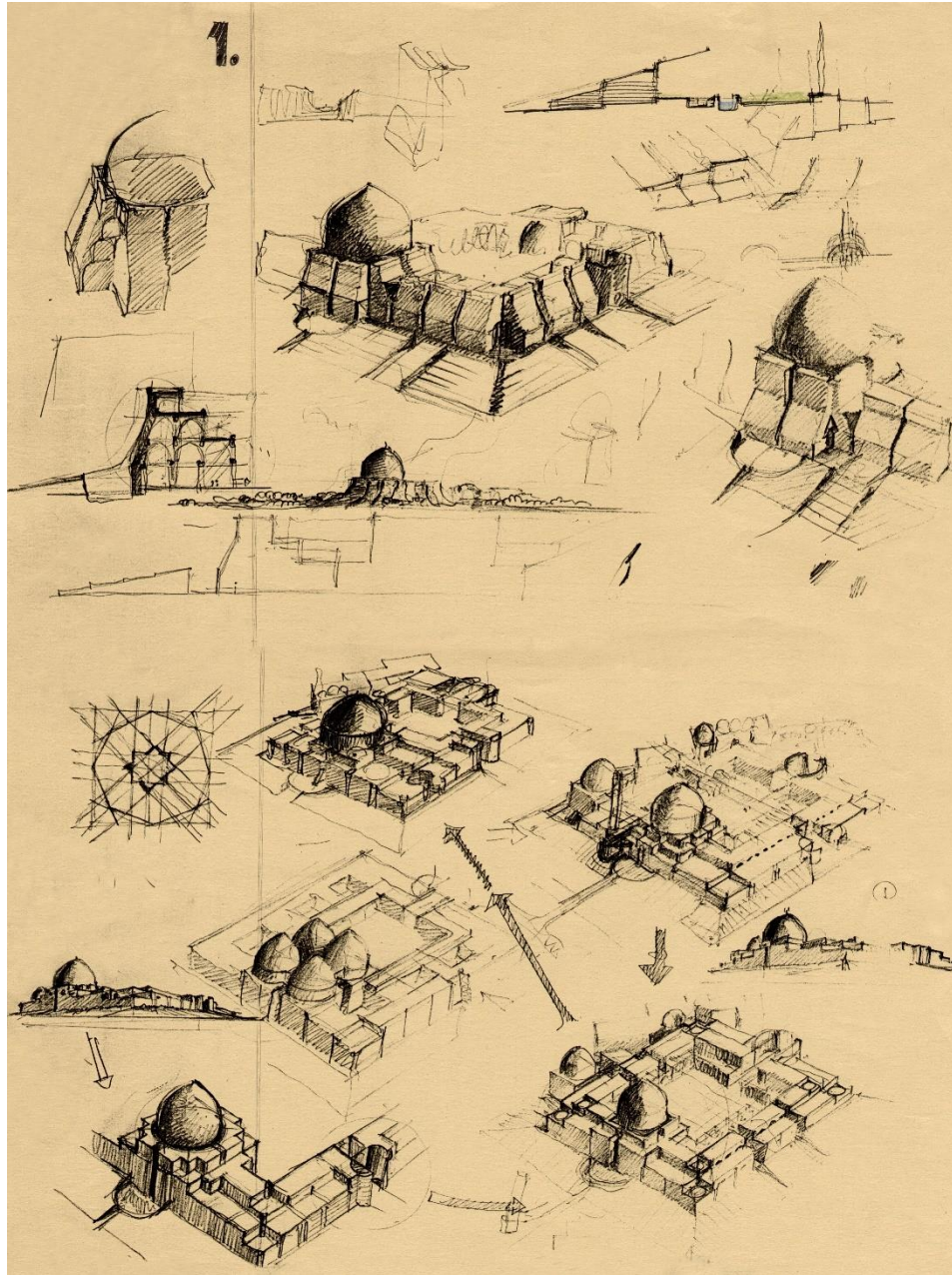
Figure 7.5: Badran's sketches of the Baghdad State Mosque's dome compared to the whole project composition. Source(ibid).

The formal language of the mosque reflects the architect deep understanding of the local Iraqi architectural environment, and its rich historic buildings, he has visited many sites for inspiration

and to build narratives, where he re-examined the traditional forms and the spatial compositions found in Iraqi houses, palaces and mosques. He visited The Khan Mirjan in Baghdad and the fortress of Al- Ukhaidir of Abbasid era, and according to Steel (2005, p. 84):

> The Ukhaidir Palace provided more detailed information about a possible architectural vocabulary, since its tower, pointed arches and intricate brickwork are still remarkably intact. The Khan Mirjan, a hotel and storage building in Baghdad, offered valuable lessons about ribs, vaults and beams used as a composite roof system that incorporates devises for natural light penetration and air ventilation. Traditional Iraqi houses showed how convective cooling could be utilized to offset the extreme heat and humidity that is prevalent in this region for most of the year.

The dome was constructed by arches and beams, with steeps windows to allow natural light. Badran did not use pendentives to transfer the curve of the dome to square space below it, his contemporary approach is inspired from Khan Mirjan and in Samarra Imam Dur building.

For the main gate of the mosque complex, the architect integrated the exiting valley of trees with the main route leading to the mosque's main entrance, he also, added artificial lake to the edge of the site, which recalled Taj Mahal.

The unique feature of Badran's design, is in his ability to create a spatial system, that is proactive and dynamic with the urban context of the mosque, the geometric order of the design, made the project more humanised in scale and prevented the monumental image as it would have been expected in such scale of state mosques projects.

7.3.2 Ali bin Abi Talib mosque in Doha, Qatar (1984)

The urban context of the mosque has challenged Badran, he has to find a design solution, in which the mosque location in the city have to reconcile with the mosque orientation towards the Qibla

direction. to address this issue, Badran avoided to separate the mosque from its immediate compact urban context, he sought after a design strategy where he can create a connection between the mosque and its surroundings of streets and buildings (Figure 7. 6).

To do so, he added an attachment of buildings to the site, as inner enclave, in which shops can be included into the mosque architectural program. he designed these buildings with network of interior corridors and courtyards to provide an interactive design that can responded to the mosque and its social aspect.

The formal architectural language of the mosque expresses a contemporary reinterpretation of traditional Qatari architecture, indicated by the design of the minaret and the dome which recalled the Qubib mosque design (Figure 7.7)

Figure 7.6: The inner enclave added to the Ali Ben Abi Talib mosque. Source: (ibid).
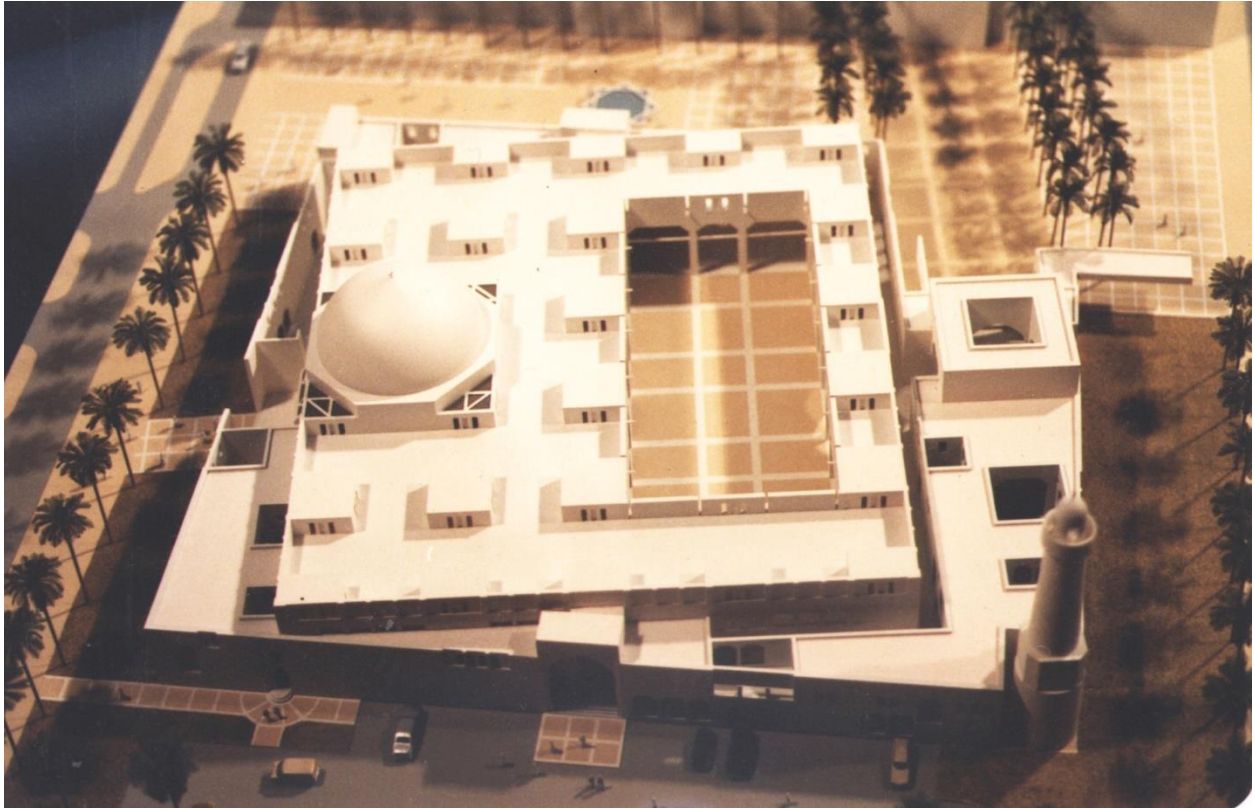
Figure 7.7: a model of Ali bin Abi Talib mosque. Source: (ibid).

7.3.3 The King Abdul Aziz Mosque in Kharj (1996-1998)

This mosque was commissioned to Badran after his Qasr Al-Hkoum mosque project in Riyadh was completed in 1992. By this time, Badran has developed his design concepts derived from his previous mosque in Riyadh, where he studied the Najdi architecture traditional forms and its conceptual framework. The mosque was described by Badran (2012) in the interview as 'an offspring of the Qasr Al-Hkoum mosque in Riyadh'.

The King Abdul Aziz Mosque, which have been demolished with other adjacent buildings, have retrieved its architectural spirits by Badran's employments of Najdi tradition design elements, it showed by the architect adopting the palm tree as inspirational model of this agricultural

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environment, the architect has designed the main courtyard with repetitive order of palm trees, which reflect an image of the palm tree oasis that was once exited in the site (Figure 7.8).

Minaret is square and similar in design to the minaret of Qasr Al-Hkoum mosque, which is very Najdi in character. The mosque in Kharj is a reproduction of the Badran formal and spatial languages he adopted in Riyadh's State mosque. The ventilation and air systems are again used in this mosque. The following examination of the Qasr Al-Hkoum mosque will provide a deep analysis to the Najdi architecture, and how Badran reinterpreted this vernacular architectural environment into his designs of the two mosques in Riyadh and Kharj (Figure 7.9).

Figure 7.8: the upfront courtyard of The King Abdul Aziz Mosque in Kharj. Source: (ibid).

Figure 7.9: The minaret and main prayer hall at King Abdul Aziz mosque in Kharj. Source: (ibid).

7.4 Qasr Al-Hkoum mosque, Riyadh: historical urban context

The mosque was built in the district of Qasr Al-Hkoum, which represents the historical core of

Riyadh city. The old Riyadh was a small, mud-walled village located in the heart of the region of

Najd. It was the first settlement of the Saudi second state, in which 'al Saud re-established their

control of the area in 1824, the Saudi *Imam* Turki *bin* Abd Allah chose al-Riyad as his family seat'

(King, 1998, p.165). The earliest map of Riyadh (Figure 7.10) was reported by Palgrave in his

journey to Riyadh in 1862, 'who describes accurately the city and shows a drawing which might

be considered the first map of Riyadh' (Albini, 1990, p. 11). Palgrave's map indicates the boundary

wall of the village of Riyadh at that time, which reached the height of 25ft and the interior streets,

markets, shops, the main square, gates, the Friday mosque and the ruler's palace which he referred

to in the map as *Feysul's* Palace, 'according to Palgrave, this palace was built by *Imam* Turki *bin*

Abd Allah' (King, 1998, p. 166). Thus today, the name of the mosque is named after him.

However, Palgrave's map excluded the Qasr Al-Masmak, which 'was not yet existing but the rest of the landmarks were there in their actual location; the big mosque and the King's reception palace; (Kasr El-Hokm)'. (Albini, 1990, p. 11).

It is also noticeable in the map that Palgrave marks the connecting colonnade between the palace and the great mosque.   He gave a detailed description of the palace in which he referred to this physical connection, (King, 1998, p. 165), as quoted below:

> Here we found ourselves at first in a broad street, going straight to the palace; on each side were large houses, generally two storeys high, wells for ablution, mosques of various dimensions, and a few fruit trees planted here and there in courtyards. After advancing two hundred yards or rather more, we had on our right hand the palace of 'Abd-Allah, a recent and almost a symmetrical construction, square in form, with goodly carved gates, and three storeys of windows one above the other… at last we reached a great open square: its right side, the northern, consists of shops and warehouses; while the left is entirely absorbed by the huge abode of Nejdean royalty; in front of us, and consequently to the west, a long covered passage, upborne high on a clumsy colonnade, crossed the breadth of the square, and reached from the palace to the great mosque, which it thus joins directly with the interior of the castle.
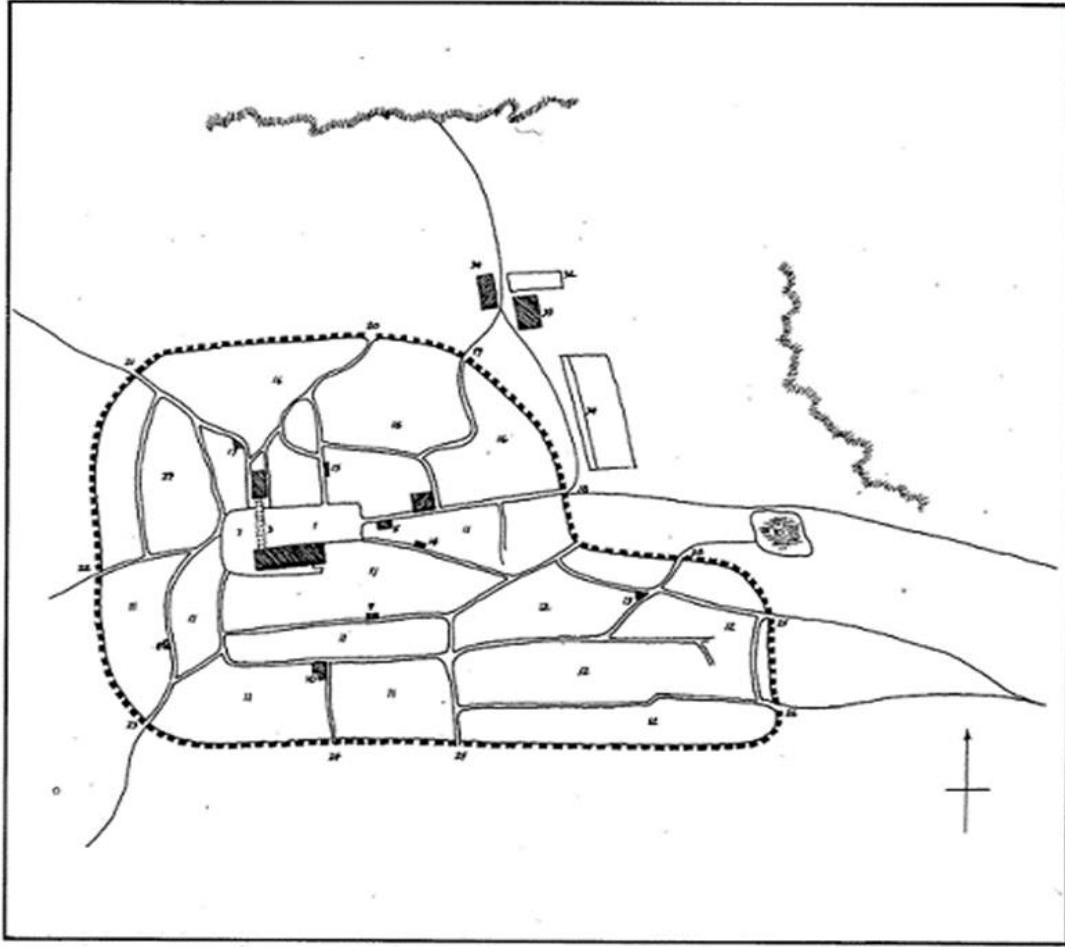
Figure 7.10: Palgrave's map of Riyadh, 1862. Source: (Albini, 1998, p.92).

It is evident that by the time of Palgrave's visit to Riyadh in 1862, the great mosque, as in the Qasr

Al-Hkoum mosque and the palace, all existed and dated to the reign of Imam Turki Bin Abd Allah

(1755-1834), the founder of the second Saudi state.

The second, and more measured map of Riyadh, was provided by St John Philby (Figure 7.11),

who visited Riyadh in 1917-1918 and described it as 'a great walled city of clay, built without

regard to symmetry in the midst of a considerable expanse of palm-groves' (Philby, 1920, p. 161).

In his map, he drew the town in detail, showing additional features as in the Qasr Al-Masmak. Yet

Philby's map retained the general disposition as recorded by Palgrave (King, 1998, p. 168). In

contrast with Palgrave's map of Riyadh, the urban fabric seemed to be the same with the exception to the number of gates; while in Palgrave's map there are eleven gates, in Philby's map there are only nine gates that are not all in use, except to give access to palm groves beyond the walls. This is, however, due to the demolition of Riyadh's wall by the forces of Bin Rashid in 1887. Also, 'it seems that the covered pathway which appears in Palgrave's plan and which connected the palace to the mosque creating an enclosure of that big space has disappeared on Philby's map' (Albini, 1990, p. 11).

The third map of Riyadh was provided by Dickson in 1937 (Figure 7.12); his map shows the expanded city of Riyadh and its vicinity, with the addition of Qasr Al-Murabba (Facey, 1992, p. 296). The morphology of the urban fabric of Riyadh appears to be consistent in all of these three recorded maps except for some variations which have appeared throughout the years, which were in regard to demolition or building new palaces, gates and expansions in area and scale. The record of the above maps indicates that Riyadh, as an Arabian town, was planned to include the ruler's palace, the mosque, the market and squares or *Sahat* in one architectural program that follows the principals of the traditional Islamic urbanity. Nevertheless, the current spatial organisation of the Qasr Al-Hkoum district was remodelled within the context of traditional Najdi architecture and patterns into a contemporary-modernist architectural expression. This point will be discussed further as the chapter progresses.
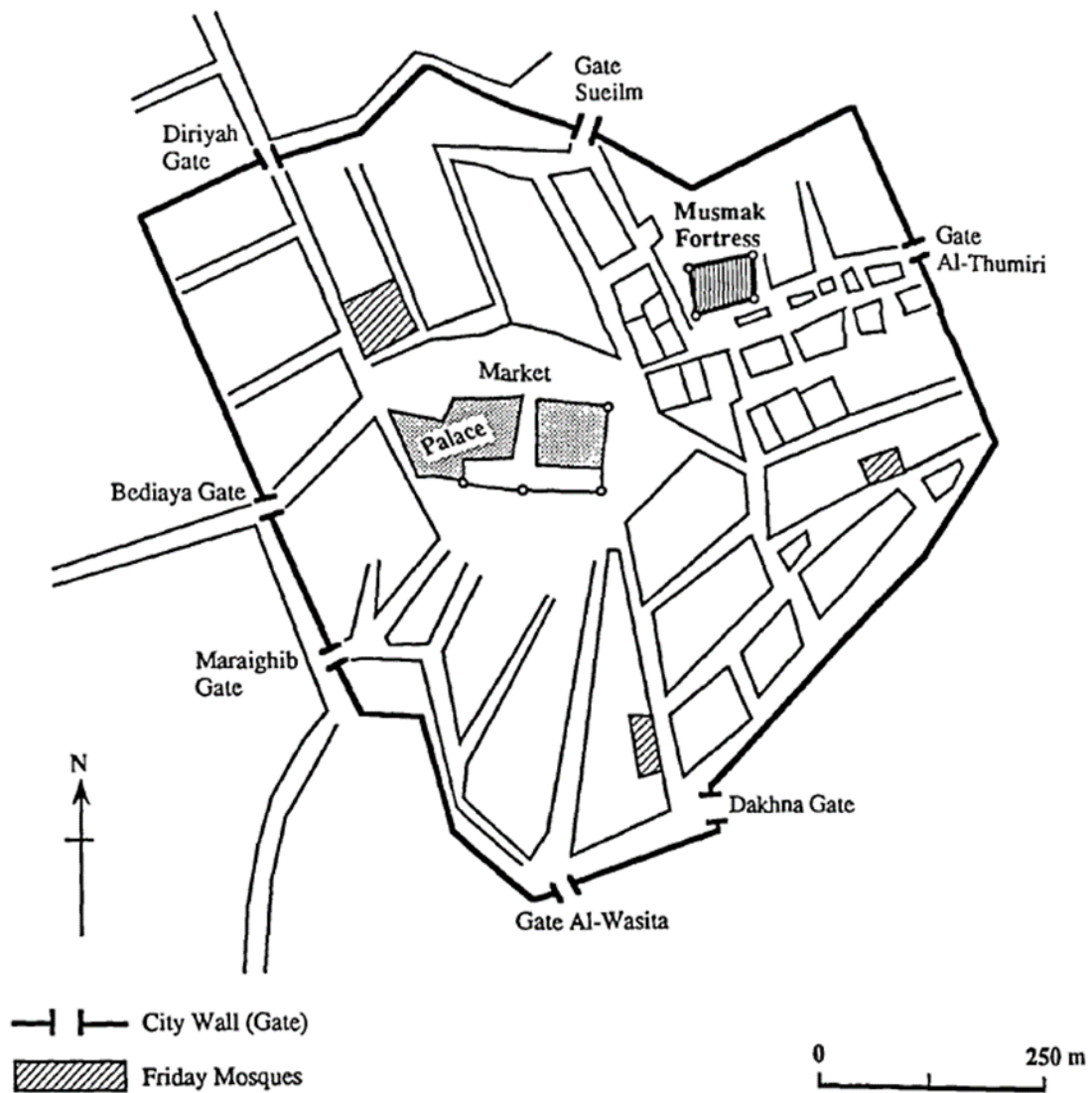
Figure 7.11: Philby map of old Riyadh in 1919, showing the city wall, gates and Al-Masmak fortress. Source: (St. John Philby, The Heart of Arabia, Vol. 1, London, 1922).

Figure 7.12: Dickson's 1937 map of Riyadh. Source: (Facey, 1992, p. 297).

The architect himself (2012) stated that 'when I was commissioned to design Qasr Al-Hkoum mosque, I firstly, visited three sites for inspiration and taking photographs, these sites are; Al-Masmak palace, Al- Murabba' palace and a Friday mosque in Dir'iyyah village'. As Badran claimed that he was inspired by the traditional architecture of Najd, it is crucial to provide a review of Najd architecture and its spatial organisation to draw a wider understanding on how Badran reinterpreted this indigenous architecture to build a contemporary language in the design of the Qasr Al-Hkoum mosque. The following will review the traditional architecture of Najd with an emphasis on the three sites mentioned by Badran.

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7.4.1 The traditional Architectural of Najd

'The Najd is the region in the centre of Arabian south of the Nafud desert. The principal areas of occupation are clustered around the Jabal Tuwayq and include Riyadh' (Petersen, 1996, p. 254). The central district in Riyadh is composed of clusters of buildings of cultural, political and architectural significance. These buildings were built in a compact area known as the Qasr Al-Hkoum district, which contains the ruler's palace, the great mosque, the Al-Masmak palace, Murabba palace, squares, shopping units and the gates (Figure 7.13).

Figure 7.13:   location of Riyadh city, as the capital city of Saudi Arabia. Source: (www.mapsof.net/ map/jeddahsaudi-arabia).

The characteristics of the traditional architectural of Nejd can be divided into the following factors: the building construction methods and materials; the architectural forms and the traditional spatial context. Most of these characteristics are shared by the different villages and towns of the vast region of Najd, Dir'iyyah, Ha'il, Burayda, Unayza, Jalajil, Al-Hayr, Sudus, Ghatghat, Dumat Al-Jandal and Sakak.

7.4.2 Building construction methods and materials

'The building material used throughout Najd was unfired mud-brick, reinforced when necessary with wooden beams. The walls thus constructed were covered with mud-plaster which was smoothed by a broad, toothed scraper made of wood' (Albini, 1990, p. 8). This technique of building was used to create shallow parallel lines of patterns by a sweeping motion over the surfaces of the walls. It was also common to use limestone as a base for the walls or the columns. For larger, roofed spaces, the columns were used for support, which were usually made with beams of tamarisk; for example, the mosques' roofs, described by Albini (1990, p. 8), 'were rest on columns which are usually made of stone "drums" resting one upon the other and smoothed with plaster' (Figure 7.14a, 7.14b.)

In Riyadh, like all Najdi towns, the walls were thick with featureless facades, except where they were perforated on upper levels by patterns of openings in the form of triangles and lancets to provide the circulation of air and to allow the sunlight in (Figure 7.15).
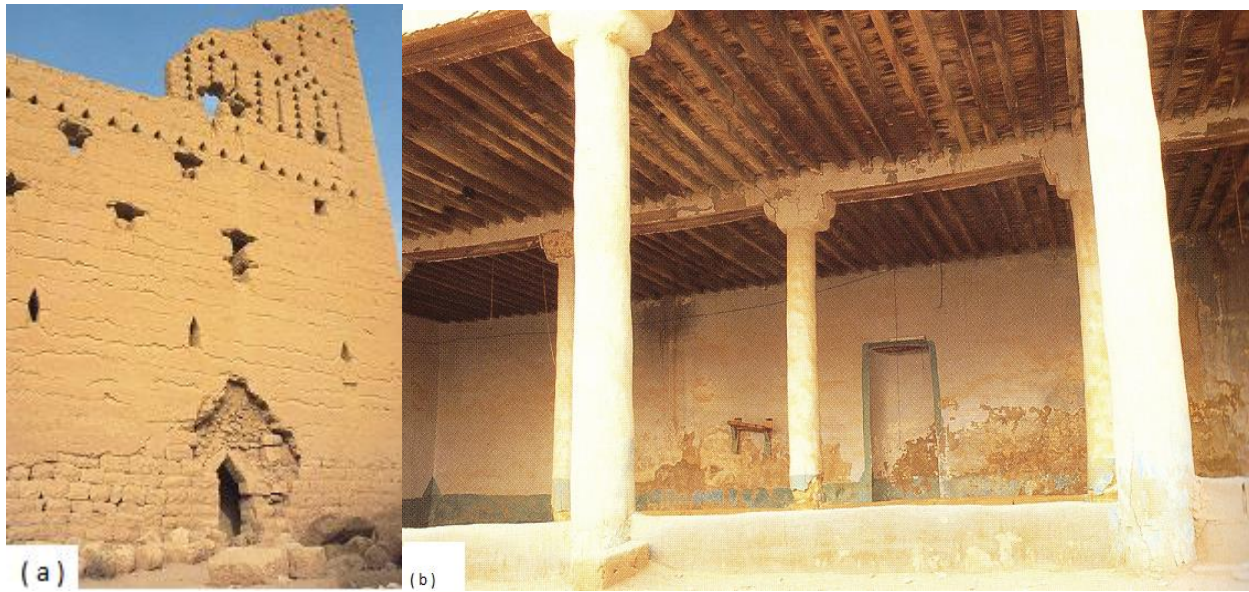
Figure 7.14: a) The pattern of parallel lines created on the walls. b) The roof and columns of the

Turayf mosque in Dir'iyyah. Source: (Facey, 1997, p. 91, p. 94).
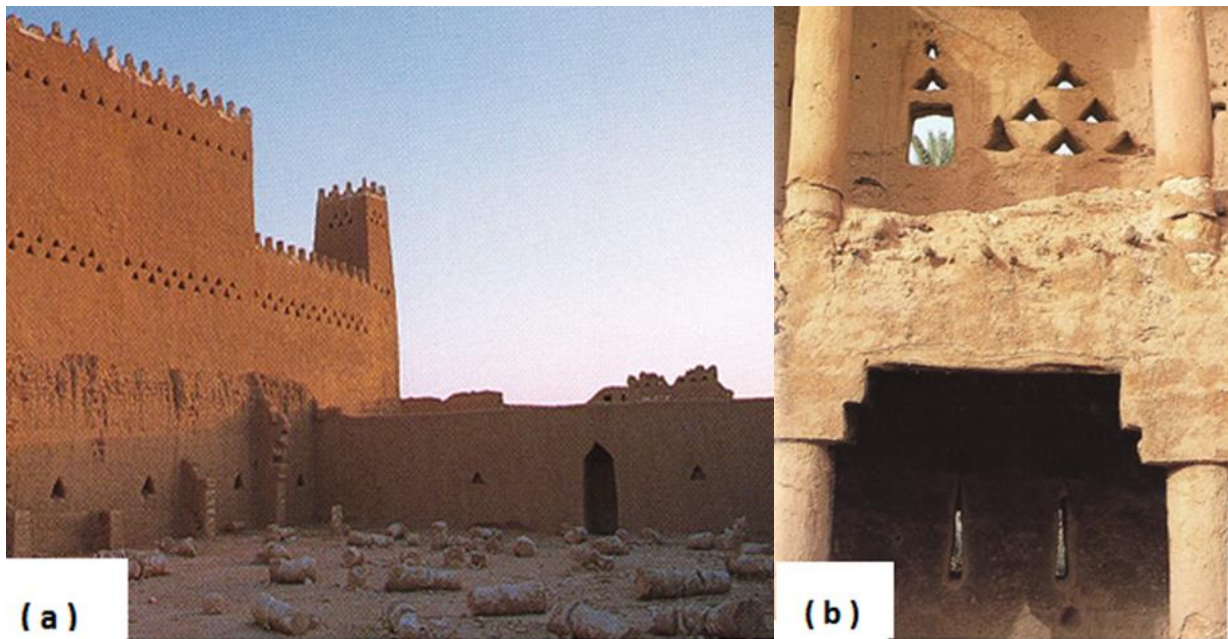
Figure 7. 15: a) The mosque of Sa'd and the palace of Farhan in Dir'iyyah; the qibla wall and the

mihrab (bottom). b) the details of columns, lancets and ventilation triangles of Subalat Mudi in

Dir'yyah. Source: (Facey, 1997, p. 104, p. 95).

7.4.3 The architectural forms; Arches, doors and windows

Two-storey house building was common in Najd, excluding Hai'il at the northern Najd, which was a rare exception (King, 1998, p. 139). However, the interior arrangement was typical for Najdi houses: a building with courtyards and a boundary wall articulated by relatively small windows openings, positioned high in the walls in order to prevent the heat and dust, but it was also to maintain the privacy of the inhabitants. Also, there were two entrances for the house: one for the females and one for the males - an arrangement of two doors are still common in Saudi dwellings. In his visit to Burayda in 1982, King (1998) described one of the houses he visited, where a 'general plainness of high walls was relieved by raked corner towers, giving the house a fortified appearance. The towers and walls below were articulated by horizontal bands of V- shaped mouldings in relief, and the walls carried stepped crenellations' (King, 1998, p. 143) (Figure 7.16).

Figure 7.16: House in Burayda (1982); plain walls are common in Najdi houses. Source: (King, 1998, p. 138).
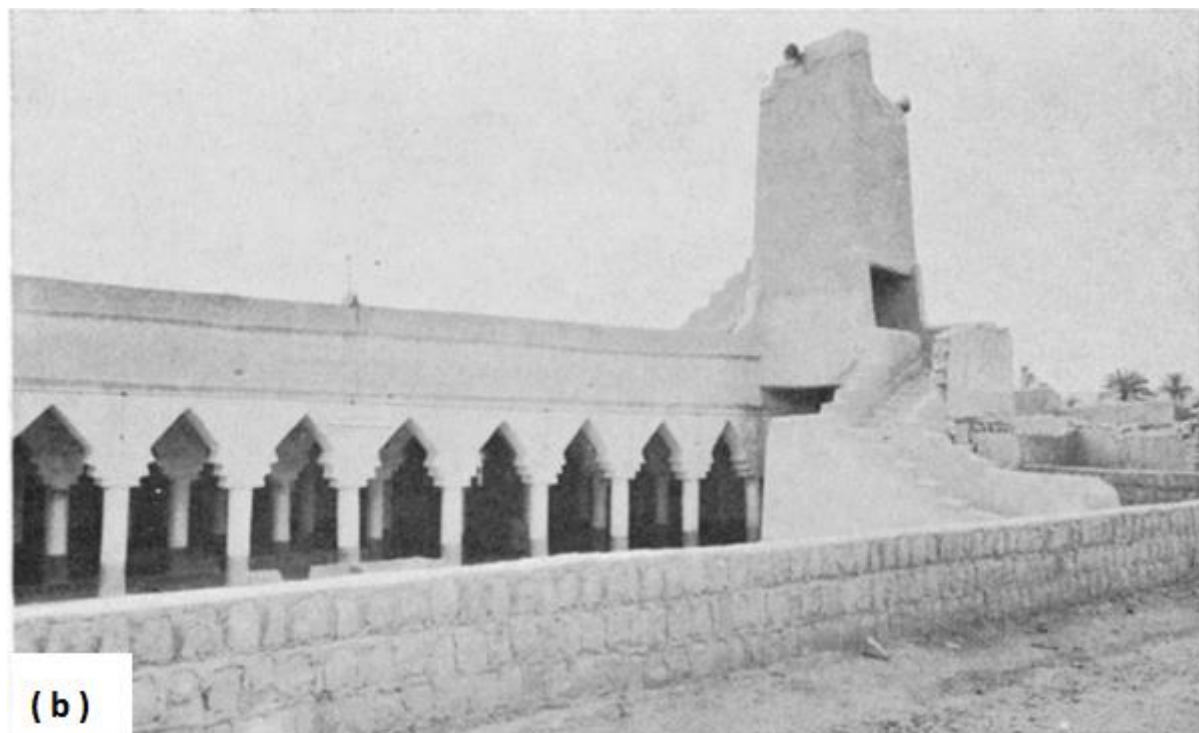
Figure 7.17: a) Al-Hilla mosque and; b) Irqa village main mosque, both are najdi mosques; a view of the keel arches, minaret, riwaq and the staircase. Source: (King, 1978, p. 486, p. 487).

'Rectangular minarets built in conjunction with a staircase are more commonly built against the north wall of the mosque enclosure' (King, 1978, p.494).   The distinguished character of the minaret in the old Najdi mosques, was the exterior staircase attached to its main structure, which can be accessed through the courtyard, or in some cases leading to the flat roof. They are relatively low in height and square in plan. - As discussed in chapter four. (Figure 7.17a, 7.17b).

King (1978, p. 495), described the spatial character of Najdi mosques as 'mosques with rectangular-plan minarets, built over the head of the staircase from the sahn to the sanctuary roof are found everywhere in southern and central Najd.' He also found that 'The most common mihrab in Najd is in the form of a curved recess in the qibla wall, which is usually vaulted by a keel-arch' (King, 1978, p. 496).

Doors were made of wood and decorated with paint and studded with nails, a brass handled door or plain metal ring were used as a knocker. Also, in some cases, the doors were framed with carved gypsum decorations. According to Facey (1997, p. 84), 'doors which at Dir'iyyah as elsewhere in Najd, where the one building feature which was colourfully decorated, though lintels and cross-beams were also often decorated with patterns of scorched dots and some colours' (Figure 7.18).

'The arch is absent from traditional central Arabia architecture, the closest approximation to it being the keel-arch' (Albini,1990, p. 8), while the keel arches were dominating in central Najd, there was some few variations in the design of the arches recorded by King (1998, p. 129) in his visit to Dumat Al-Jandal in 1975.

Figure 7. 18: painted decorated doors of Najdi buildings. Source: (Facey, 1997, p.84, King, 1998, p.151).

7.4.4 The traditional spatial context in Najd

One of the spatial urban elements that were commonly built throughout Najd (Figure 7.19) were the bridges over the narrow alleys, usually to connect family houses through the condensed fabric of neighbouring buildings (Figure 7.20). This interrelated physical element was adopted by Badran's mosque in Riyadh, where he designed two bridges to connect the mosque building with

the adjacent northern and eastern buildings which now houses the (ADA) offices, imam residential facility, religious authorities' offices and a school. In addition, two bridges on the western side of the mosque connect to the governor' palace.

Figure 7.19: view of Riyadh in 1949-50. Source: (Facey, 1992, p. 308).

Al Masmak is a fortress palace built during the Saudi second state. This building was described by (Albini, 1990, p. 19), as 'in 1902, Qasr Al-Masmak dominated the skyline of Riyadh; even as late as the 1930s, its round towers could be seen from out in the desert, standing out over the lower mud houses in the rest of the town'. Besides its historical distinction as the place that marked the establishment of the present Saudi Kingdom, 'The architectural significance of this building relies

on its rectangular ground plan, its square or round towers, its steeply-raked mud-bricks walls and its numerous appertures' (Albini, p. 19) (Figure 7.21).

Figure 7.20: bridge over alley at Jalajil (1982). Source: (King, 1998, p. 150).

The interior of the Al-Masmak palace was composed of a number of rooms; staircases to the upper floors and interior courtyards surrounded by colonnades of arches.   The interior walls were decorated by patterns of motifs of geometrical and botanical shapes (Figure 7.22a). The exterior walls were pierced by openings of geometrical shapes of triangular, squares and rectangles, located

at the upper levels of the walls. The top of the towers ends up with a parapet of triangular shapes. (Figure 7.22b).

The restoration work of this palace was documented by Albini (ibid, pp. 19-20) who also provided architectural drawings and a number of photographic images for the palace before, during and after the restoration was completed. Today, this fortress building serves as a museum.
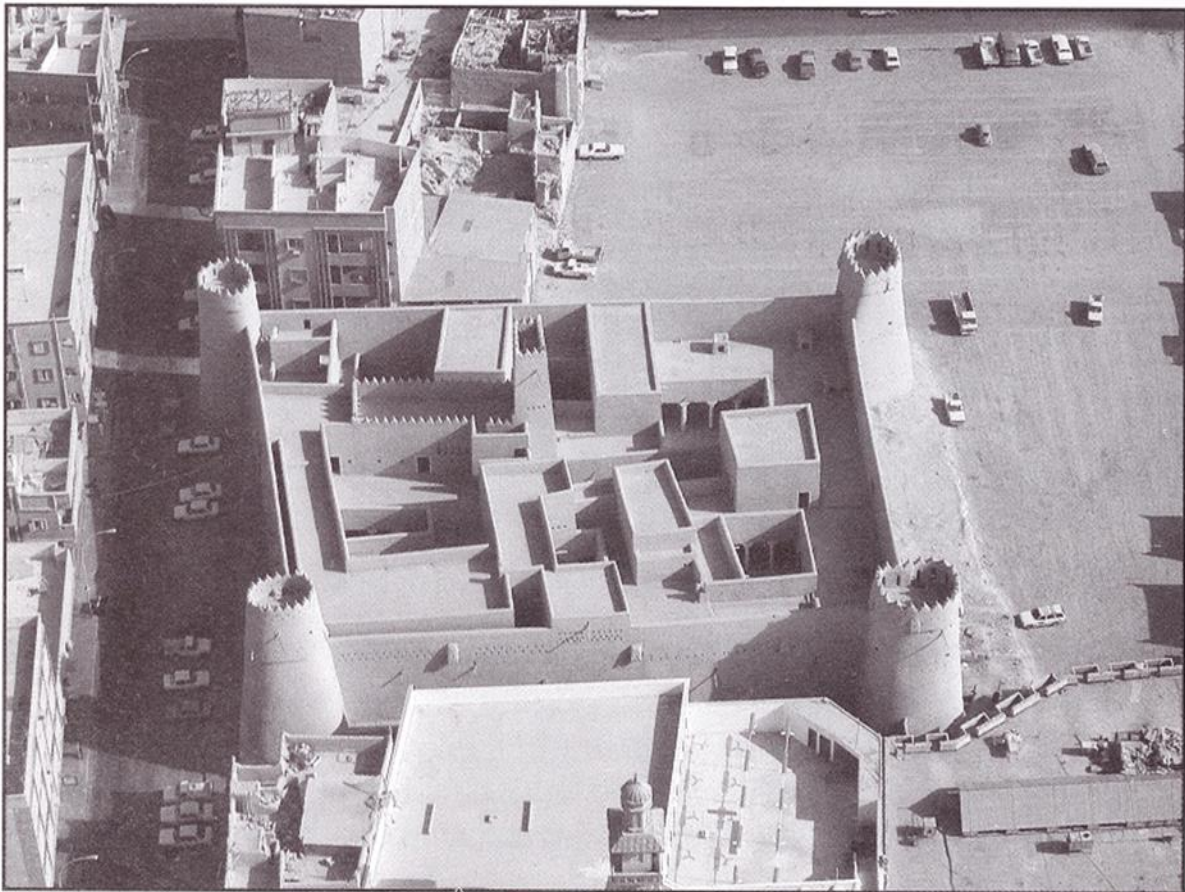
Figure 7.21: Aerial view of Al- Masmak fortress in the early 1980s, after restoration. Source: (Facey, 1992, p. 178).
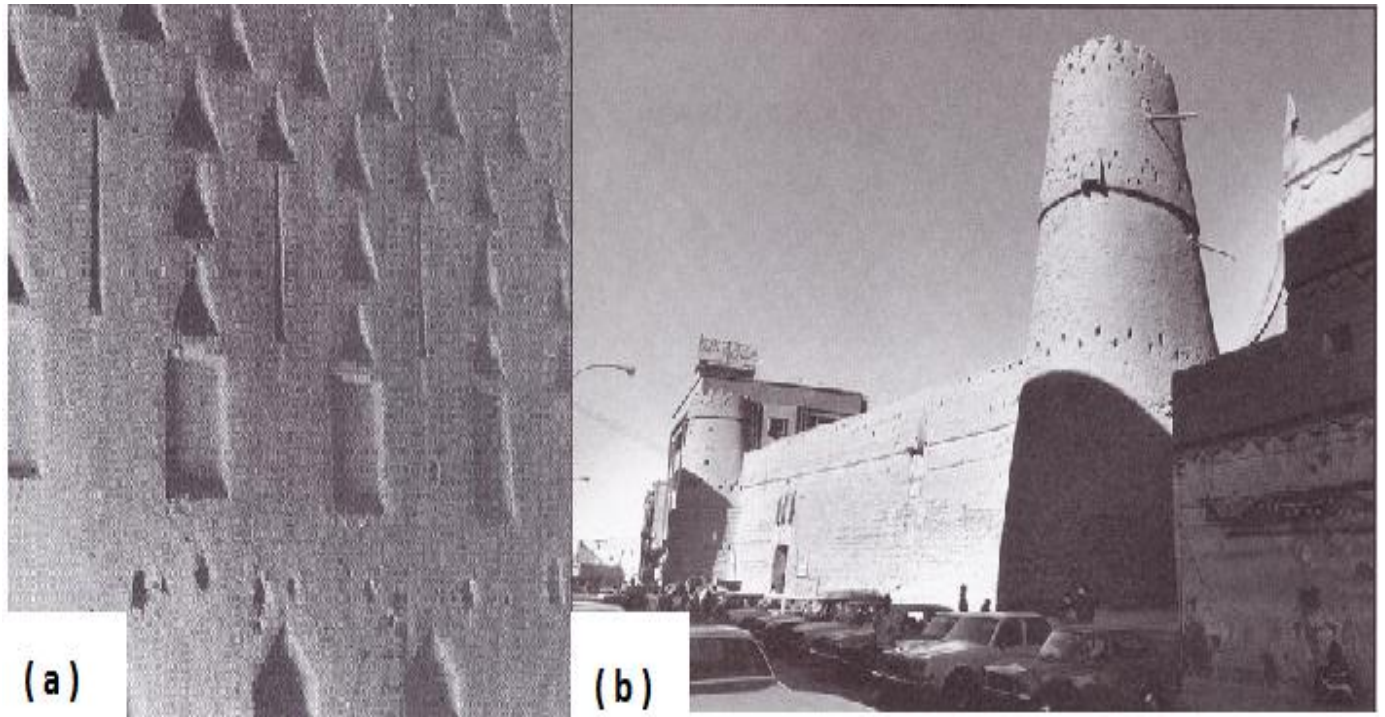
Figure 7. 22: a) the different geometrical patterns on the wall. b) The view of the corner towers and parapets. Source: (Albini, 1998, p. 80. Facey, 1992, p. 178).

The Al-Murabba' palace was built in 1936 at the north of the old Riyadh which became the residence and administrative complex for King Abdul Aziz, the founder of the modern kingdom of Saudi Arabia. The palace name means 'the square palace', referring to its square form by the dimensions of 400 by 400-meter square, built of fired mud-bricks, originally the palace complex occupied an area of over than 16 hectares and housed the King's family members and employees. The later additions were the building of the King's son's palaces. This building was considered the first building to be built outside the boundary wall of old Riyadh (Figure 7.23a, 7.23b).

However, in the 1990s this palace was restored by the Beeah Group consultants and became a museum as a part of the development project of al Murabba' area, which included additional four projects; first, The King Abdul Aziz historical centre that Badran was commissioned to design its

urban plans along with ADA and Saudi architect Ali Al-Shuaibi. The second project was, the restoration of King Abdul Aziz mosque, while the third one was building the Saudi Arabia national museum. The last project was the King Abdul Aziz foundation of research and archives, designed by Badran and completed in 1999, which was 'partly incorporated into the newly renovated al-Murabba palace and partly housed in newly constructed buildings situated close to al-Murabba' (Al-Hathloul, 2003).
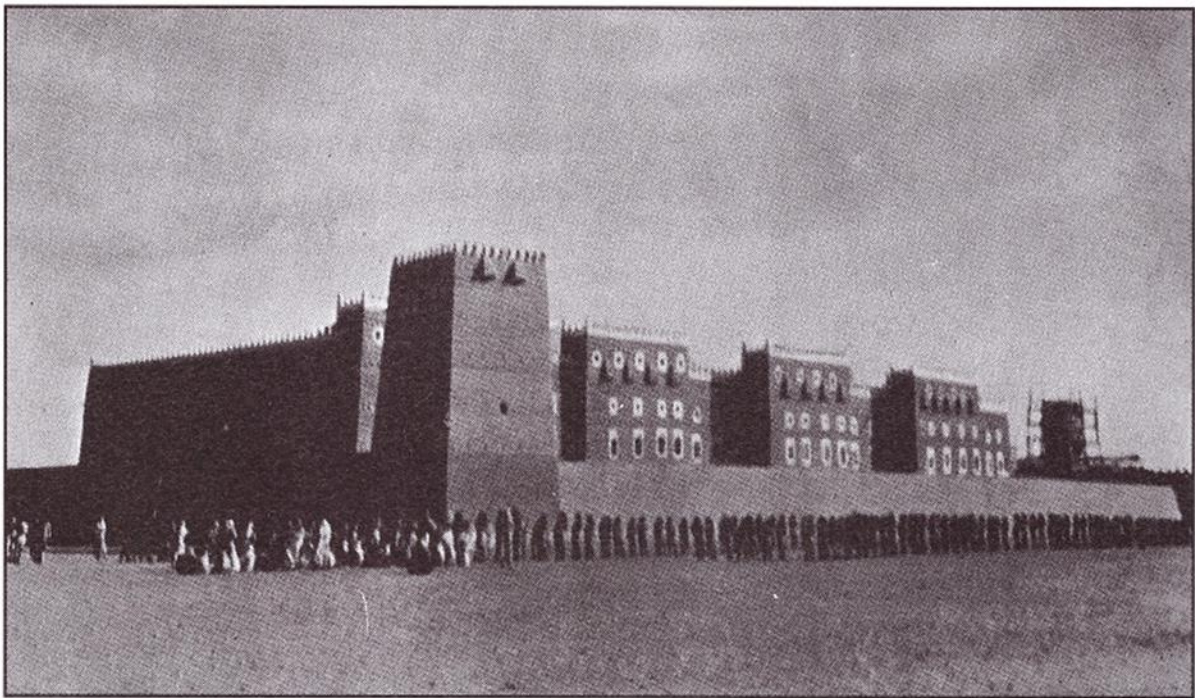
Figure 7.23a: Side view of Al-Murabba place in the late 1930s. Source: (Facey, 1992, p. 316).
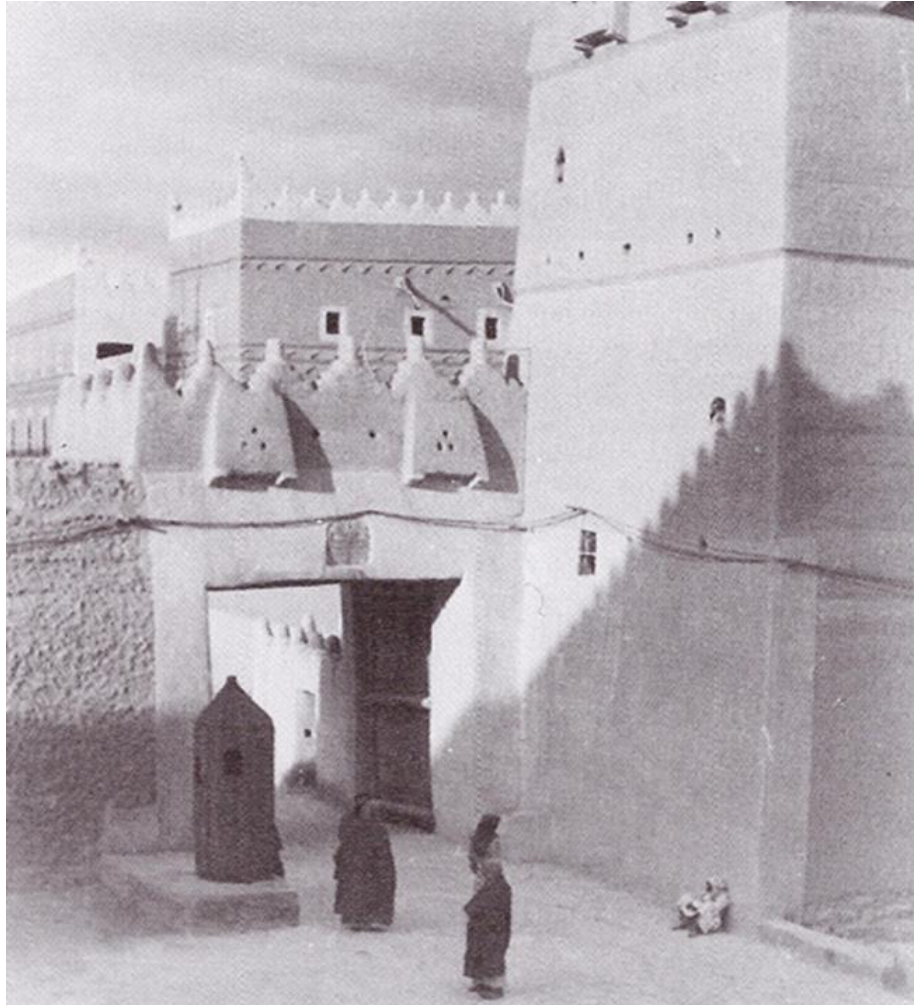
Figure 7.23b: Entrance to the Al-Murabba place in the 1940s or early 1950s. Source: (Facey, 1992, p. 316*).*

7.5 The Qasr Al-Hkoum mosque: Historical review

The urban morphology of the Qasr Al-Hkoum mosque represented many layers of cultural value; **a)** its social political values, as it was built in central position, facing the palace of the ruler and connected with it through a hierarchy of spatial spaces, on the ground level; first, it was the main *sahah* or square that hosted the visitors to the mosque, palace and the shoppers to the Souq or market which was attached to the southern wall of the mosque (Figure 7.24). Second, it was the bridge that connected the palace with the mosque, which appeared in Palgrave's map of Riyadh-

as mentioned earlier. This bridge was constructed above colonnades of arches and was merely used by the king for privacy and security (Figure 7.25), and (Figure 7.26).

b) the social political value was also emphasised by the spatial arrangement of the Qasr Al-Hkoum mosque, in respect to the ruler's palace, which both represented, the focal buildings of the Qasr Al-Hkoum district; the open *Sahat* around these two buildings acted as an integrated social system in which the circulation of movement of the worshippers, the ruler and the market's visitor's routes intersect as result of the spatial organisation of the mosque's urban structure.

Figure 7. 24: A photograph of the marketplaces/shops attached to the mosque and the main square, in 1949. Source: (The High Commission For the Development of Ar-Riyadh publications, 2006, p. 16).

Figure 7.25: View of the palace and the connected colonnade to the mosque in 1937. Source: (Facey, 1992, p. 284).

Figure 7.26: The front of the palace from the palace square in 1935. Source: (Facey, 1992, p.282).

Albini (1990, p. 12) described the architectural and the interiors of the old mosque in his visit to Riyadh as:

> The great mosque or Jami' of Riyadh is a spacious rectangular enclosure about sixty yards by fifty in area, whose main entrance faces the Suq through a gap in the row of shops lining its southern wall, while the Qibla or prayer-direction, by which the whole building is oriented, is marked by a very slight southwesterly bulge in the longer western face, near which has also on the east side is a subsidiary entrance. The internal space is divided into three sections, of which the central one forms an open court occupying about a quarter of the whole building, while the other two are covered over by low flat roofs supported on several rows of massive stone pillars to form Liwans or cloisters for the convenience of worshippers during the hot hours of the day; the inward faces of these cloisters towards the central open court form colonnades of pointed arches of typical Najdi architecture and of considerable merit, though the workmanship is rough and simple; the Liwan on the Qibla side occupies about half of the whole enclosure, leaving the remaining quarter to the other; the roofs are without ornamentation, being encircled by a low parapet with a low stepped structure of very ungainly appearance near the centre of the north side to serve as minaret. A similar but much smaller projection adorns the south-eastern corner of the building, while the Qibla niche also projects slightly above the level of the roof.

7.6 The urban context of Qasr Al-Hkoum mosque

The centre of old Riyadh was built more than once over the course of the past one hundred years (Al-Hathloul, 2003, p. 1). The mosque itself was built three times on the same site, since the original construction, with Badran's version being the third to be built (Figure 7.27). It was only in the 1970s that the Saudi government started to set different phases of developments plans for the growing capital city (Figure 7.28). The new redevelopment plans for the Qasr Al-Hkoum district went through three phases, as mentioned earlier, commissioned and supervised by ADA. Phase one was first initiated in 1976 and completed in 1983; the program of this phase consisted

of building the governorate, the municipality and the police headquarters. It was designed by Franco Albini, Franca Helg, Antonio Piva and Marco Albini. Kultermann (1985, p. 44) described these buildings as 'An intimate mix of public and private spaces, was achieved based on pedestrian circulation in harmony with traditional criteria of Arab planning and architecture'.
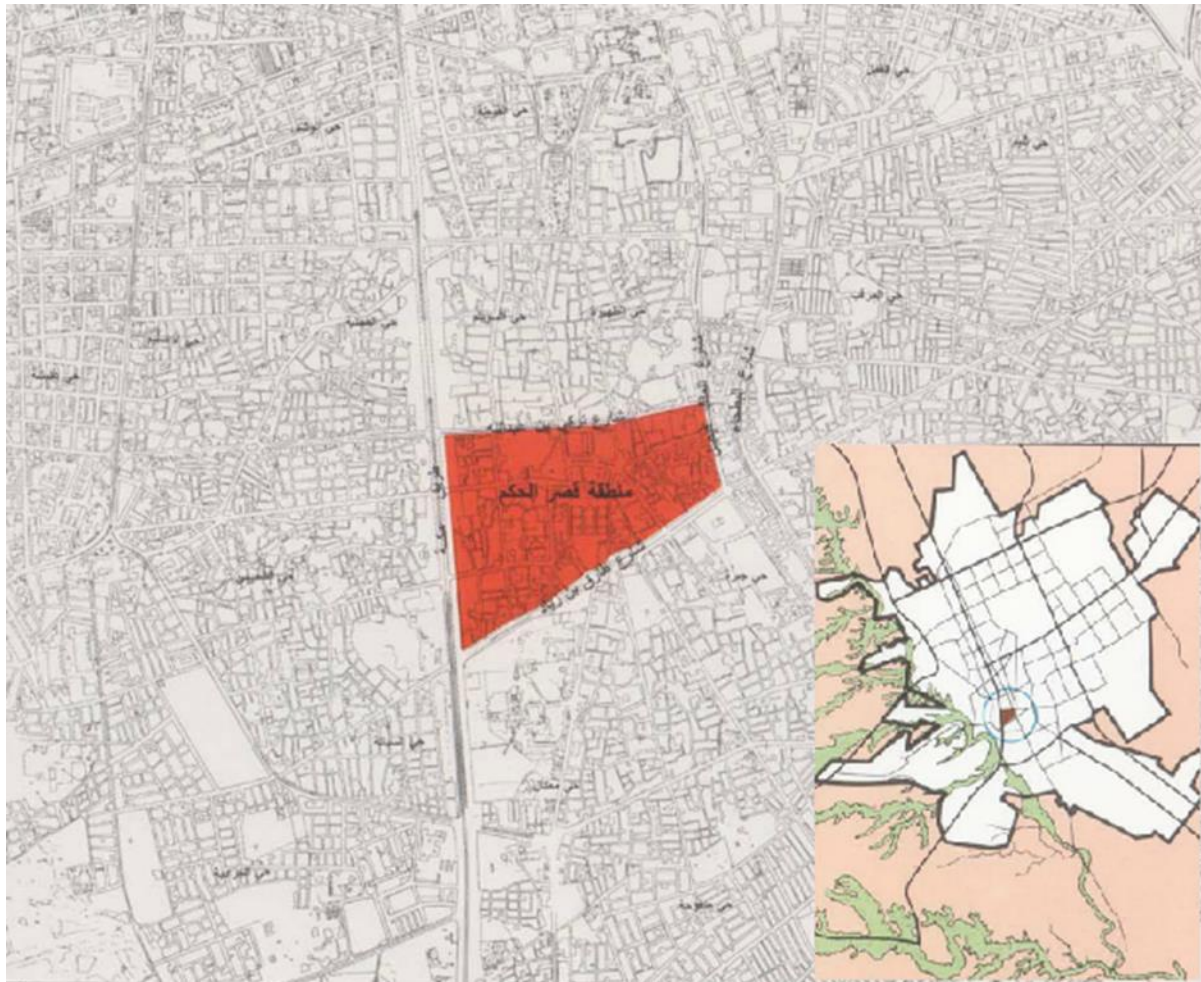
Figure 7. 27: Qasr Al-Hkoum district at the central of Riyadh city. With enlargement of the district's topographical settings. Source: (ADA publications, 1988, p.1).

Following the completion of the first phase, the work was started on phase two, which included the construction of Qasr Al-Hkoum mosque, the governor palace, Al- Imam Mohammed Bin Saud square, Al-Masmak square, the two gates of Al-Thumairi and Dukhan, Ad deera tower, parts of

the old wall of the city, in addition to public utilities, a number of public streets, and some commercial and offices facilities.
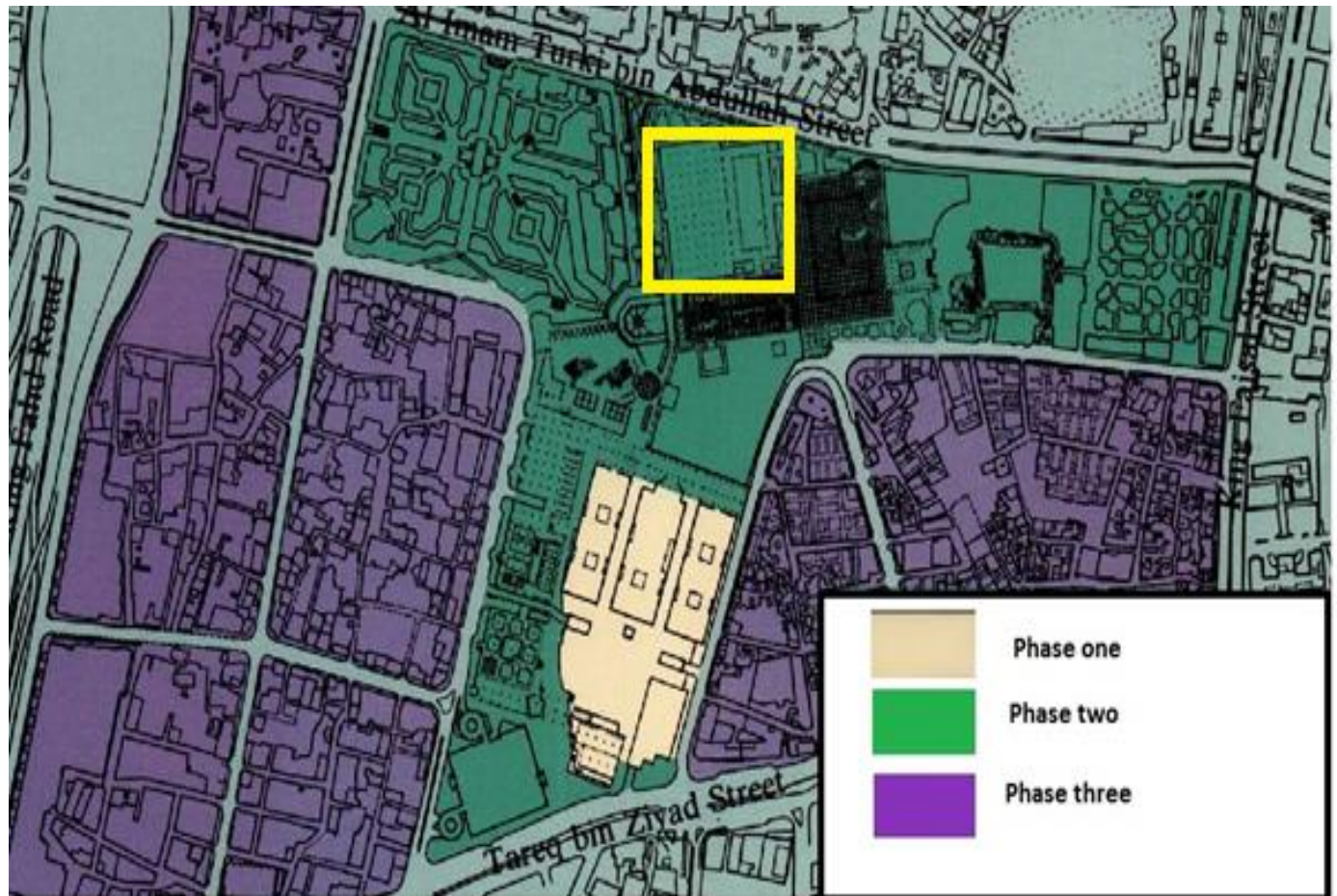
Figure 7. 28: Plan of Qasr al-khoum district showing the three development phases sites, with the mosque indicated within the urban context of the district. Source: (ADA publications, 1989, p. 9).

In this phase, Badran was responsible only for the projects of the Qasr Al-Hkoum mosque and the palace, wherein both were built on their original site, affirming their historical and nationalist meanings. His work also covered the squares to complement the whole project's urban components (Figure 7. 29).
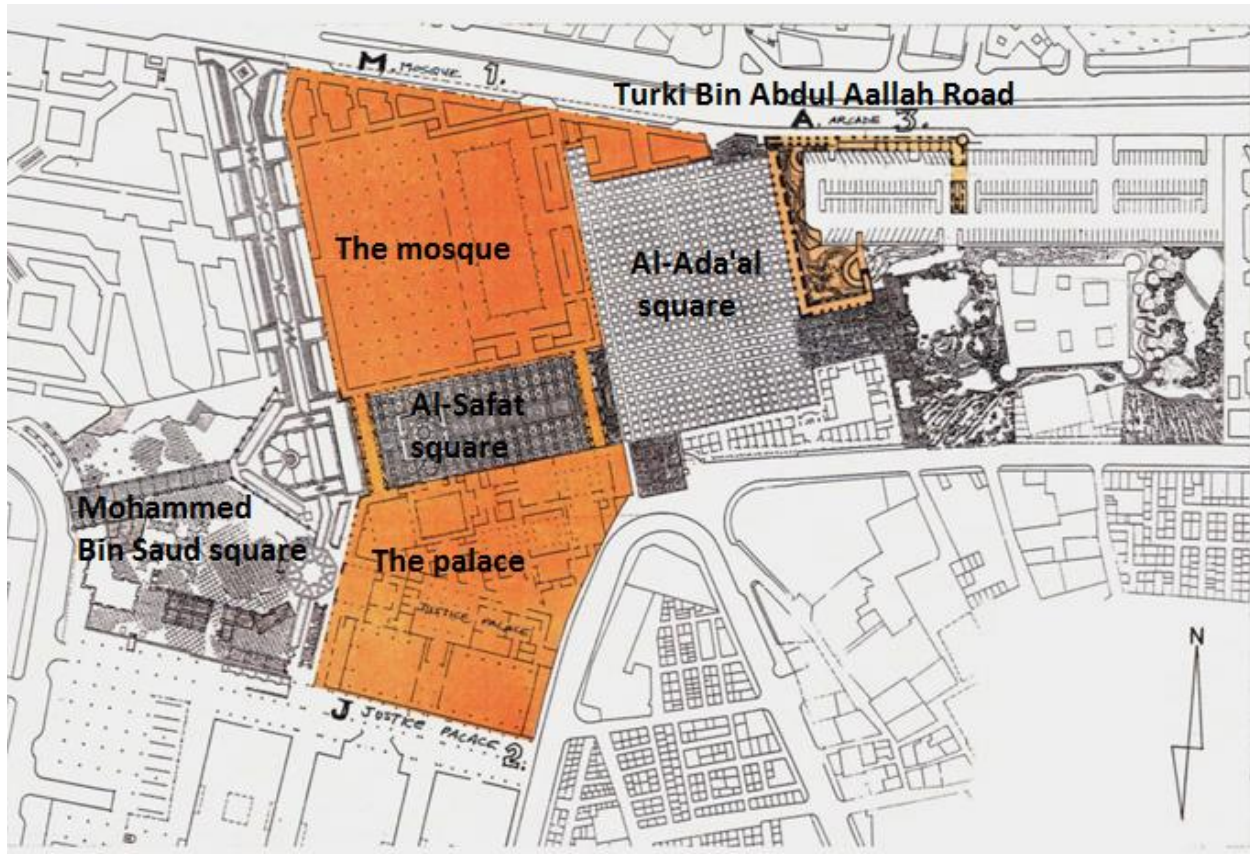
Figure 7.29: Site plan of the mosque and the palace project, indicating the squares surrounding them. Source: (Great Mosque and Redevelopment of the Old City Centre Project Brief. Compiled by the Aga Khan Award for Architecture. Geneva: Aga Khan Award for Architecture, 2013. p. 3). (Text added by the author).

Badran (2012) referred to the mosque as 'a part of architectural organisation of Qasr Al-Hkoum project; where an urban planning for the whole site existed. But, even though, the mosque represents the main part of this urbanity, the aim of my design was not the design of mosque itself, instead my focus was on the activities that surrounds it' As mentioned earlier, Badran conducted many studies of the area, to build a historical narrative of the place; to enable him to understand the interrelationships between the mosque, the commercial activity (the market) and the palace.

Figure 7.30: Aerial view of the Qasr Al-Hkoum mosque at the left, with the palace at the right.

Source: (Aga Khan Award for Architecture, courtesy of the architect).

Badran found three critical urban issues that needed to be resolved in the planning of this project, these issues are:

a)   The connection between the mosque and the palace.

b)   The connection between the mosque and the market.

c)   The distance between the mosque and the district's access points.

a) To address the first urban critical issue, the architect's intention was to emphasise the spatial relation between the two buildings, and to avoid isolating either the palace or the mosque from each other. Thus, he argued that the palace which was originally connected with mosque through bridges and Al-Safat square should re-establish this connection by adopting two spatial elements

into the urban context planning; firstly, by introducing a new square (Mohammed Bin Saud square), which opens to the relatively smaller and intermediate Al-Safat square. Secondly, by building two bridges, at the first level to link the mosque with the palace (Figure 7.30).

Figure 7.31a: View of Al-Safat square, showing one of the bridges that connect the mosque to the palace. Source: (Photo commissioned by the author).

In doing the above, he maintained the integrity of the original spatial arrangements, which seems to be a direct interpretation of the historical precedents of the building urban context. Nevertheless, he cemented the important socio-political spaces around the mosque by asserting locations and boundaries for such activities. In the past, these spaces were subject to change depending on the environmental and regulatory conditions. In his design, we can see more continuity in the interrelationship between the project urban components.

The architect designed the two squares of Al-A'adl and Al-Safat, in addition to the interior courtyard of the mosque in alignment with Qibla orientation to provide additional space for the

worshippers to use when the capacity of the prayer hall is exceeded during Ramadan, Friday prayers, funerals and Eid occasions (Figure 7.31a, 7.31b).

Figure 7.31b: Al-A'adl square. Source: (Photo commissioned by the author.).

b) Regarding the second issue, the architect aimed to adhere to the tradition of having trade activities in the mosque vicinity.   He stated during the interview (2012), that he believes 'The mosque has a relationship with the market and the city, forming a complete image, not acting as singular part of this image'. To pursue this scheme, Badran struggled to find a design strategy to echo this interrelated links of the mosque, market and the palace. Through many analysis studies that took into account the socioeconomic organisation of Najdi urbanism, the architect has drawn three design options in an attempt to find solutions for the critical urban issue mentioned above. (Figure 7.32a, 7.32b). These options are:

 To separate the triangular area of commerce from the mosque with a service street between them, to connect this wedge to the rectilinear wall of the mosque but to keep the function separate, and

to allow the prayer hall to extend all the way to the street, taking over half of the commercial wedge. (Steele, 2005, p. 96).
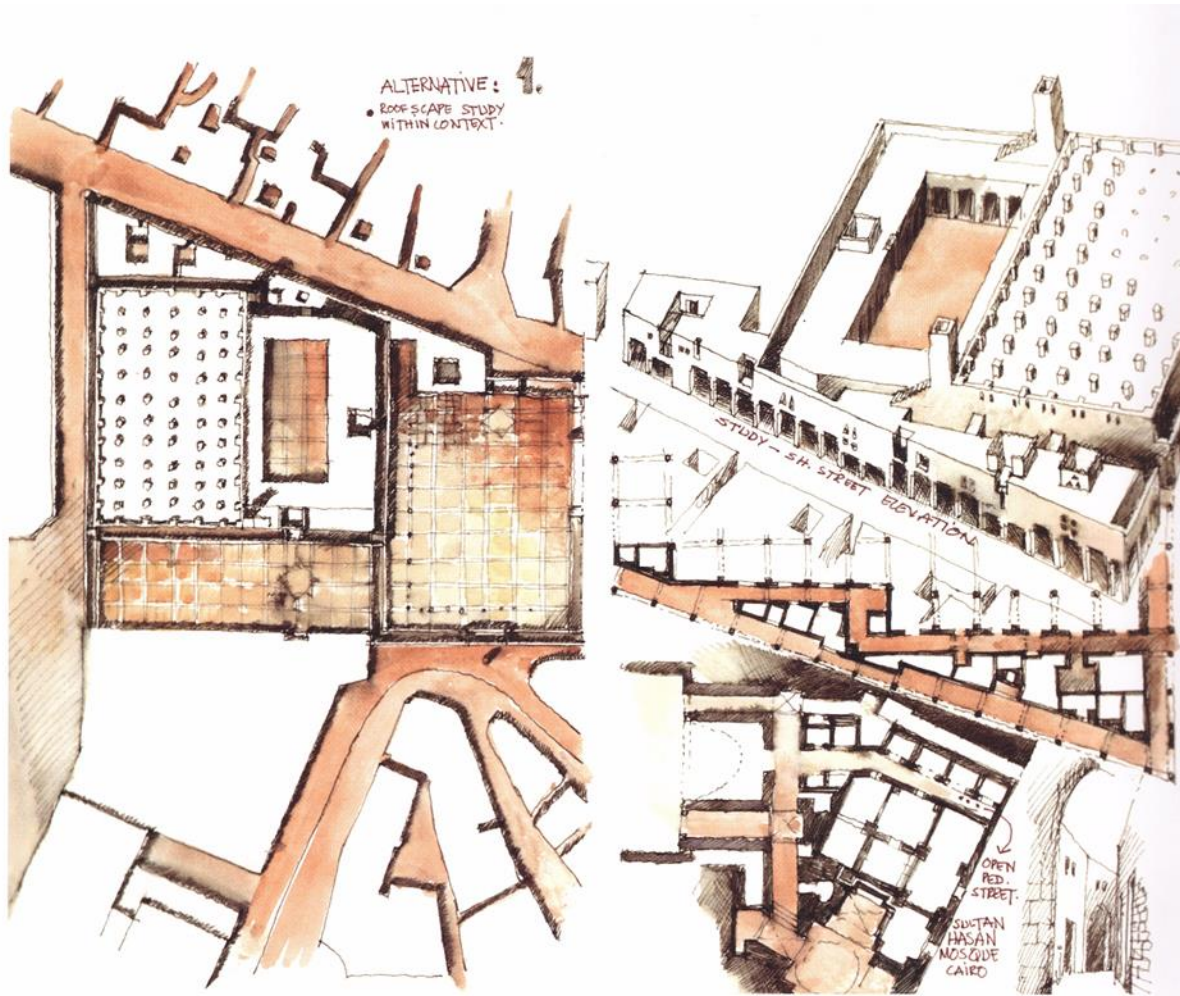
Figure 7. 32a: first alternative design of the mosque with its surroundings. Source: (provided personally by Badran, 2012).
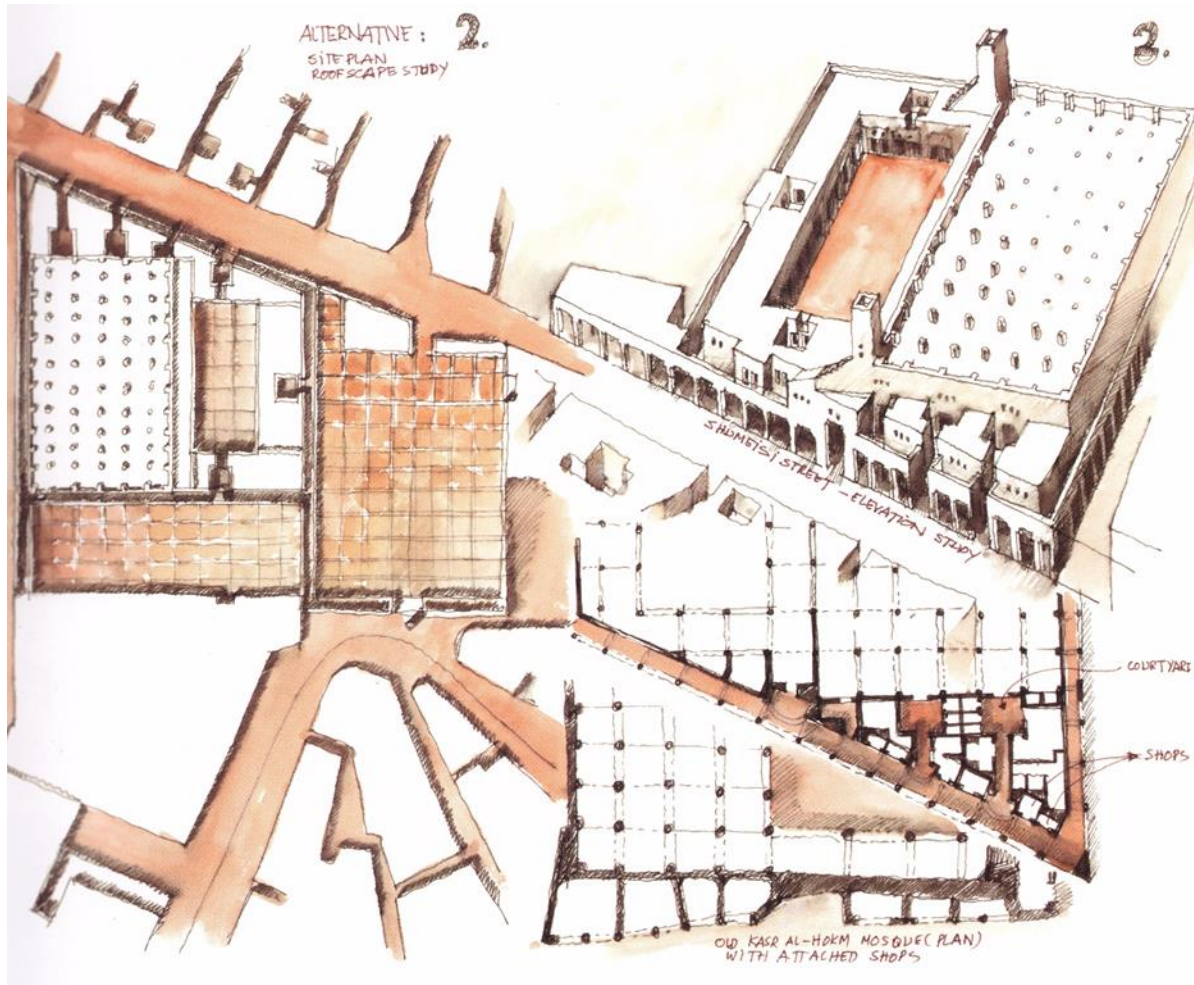
Figure 7.32b: Second alternative design and present configuration of the mosque and its urban context. Source: (Provided personally by Badran, 2012).

The second option was adopted by the architect, whereas by implementing this design strategy, led to creating a triangular form of a building that he refers to as "infill", in which this three storey building accommodates the Imam and *mou'athen* (the man who calls for prayer) accommodations, a library, a computer centre, religious authority offices, a Quranic School and ADA offices. On the ground-floor level of this infill, there are many shops units that opens to the interior alley and the northern road, which stretches to the edge of the eastern triangular building. In addition to the wall-arcade or riwaq, that runs parallel to the Qibla wall at the west of the mosque. The architect

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studied the connection of the infill to the mosque by introducing three alternatives design in his analysis studies of this connection, which included two spatial elements of pedestrian street and courtyard, with the third alternative as linking the mosque directly to the Turki Bin Abdul Allah road at the north of the mosque. The final decision was to select the second alternative design solution of creating interior courtyard (semi-public space) leading to the mosque's secondary entrances (Figure 7.33).

Figure 7.33: Badran's three alternatives design solutions to connect the mosque with infill building and the adjacent areas. Source: (Provided personally by Badran, 2012).

Initially, the proposal for the Qasr Al-Hkoum palace and the mosque included a third element for a cultural centre, which was later cancelled. Badran, in an attempt to compensate for the loss of the cultural centre, adopted the use of arcades as a second skin behind the walls of the mosque to host the commercial activities. He called them 'The Living Walls' (Badran, 2013), as an imagery of the Khans in the Abbasid periods, along with the architect's own memories of people's gatherings at the Jerusalem boundary wall after Friday prayers (Figure 7.34a, 34b.).

Figure 7.34a: wall-arcades with shop units opening to the north road. Source: (Photos commissioned by the author).

The view from the narrow alleys, with bridges connecting upper levels with the mosque, resembles the old spatial fabric of the old Najdi town, discussed earlier in the chapter (Figure 7.35). The spatial arrangement of the two buildings was also inspired by the Sultan Hassan mosque and the Madrasah complex (Figure 7.36), which belongs to the Mameluke era; the citadel is separated from the mosque by a street but it complements the mosque with its proportions and design. Such

narratives drove the imagination of the architect to design the mosque with inspiration from different cultures, resulting in multi-readings of the mosques' architectural expressions, which as Badran (2012) argues: 'My projects always, provides an opportunity for meditation, the observer can read different cultural interpretations, and not the singular cultural reading that is found in most of other projects'. Badran's reinterpretations of these physical, spatial and symbolic forms was through the process of exploring the social forces and environmental conditions behind its traditional typologies and meanings - avoiding copying them as models.

Figure 7.34b: The wall-arcade at the western side of the mosque. Source: (photo commissioned by the author).

According to the architect (2012), 'There are interaction between people through the trading activities; before and after prayers. I was thinking of a design methodology, to convert this reading into an architectural paradigm, this was not a requirement in the competition but I added it, by introducing the 'infill', to be part of the mosque urban components'.

Figure 7.35: bridges linking the mosque with infill building on the first-floor level. Source: (Photo commissioned by the author).

The wall-arcade running along the northern wall of the mosque, beside the Turki Bin Abdullah road, edges the northern side of the district, connecting the palace and the mosque, along with the eastern extension of another triangular form of an infill building is conceived as a resemblance of an Al-Masmak fortress, which has a major influence on the mosque's and the palace's design. Furthermore, the wall-arcade creates a transitional space between the mosque and the street, acting

as transitional element between the secular (commercial and social activities) and the sanctity of the mosque (the prayer hall). This wall, also, seems to be an attempt to evoke an image of the boundary wall of the old Riyadh.

Figure 7.36: The Sultan Hassan mosque and the Madrasah complex. Source: (Aga Khan Award for Architecture, 2000).

c) The distance between the mosque's entrances and the district's access entry points

There are several entry points to the whole district which lead into the mosque by direct and indirect accesses (Figure 7. 37). The direct accesses are the ones leading to the two main entrances and secondary entrances of the mosque; first main entrance opens into the Al-Adal Square, which also has an entry point with the street and the car park at the east. The second main entrance can be approached through the Al-Safat square, facing the royal gate of the governor's palace. The

mosque secondary entrances are leading directly to the prayer hall, through the wall-arcade at the north and south of the mosque.
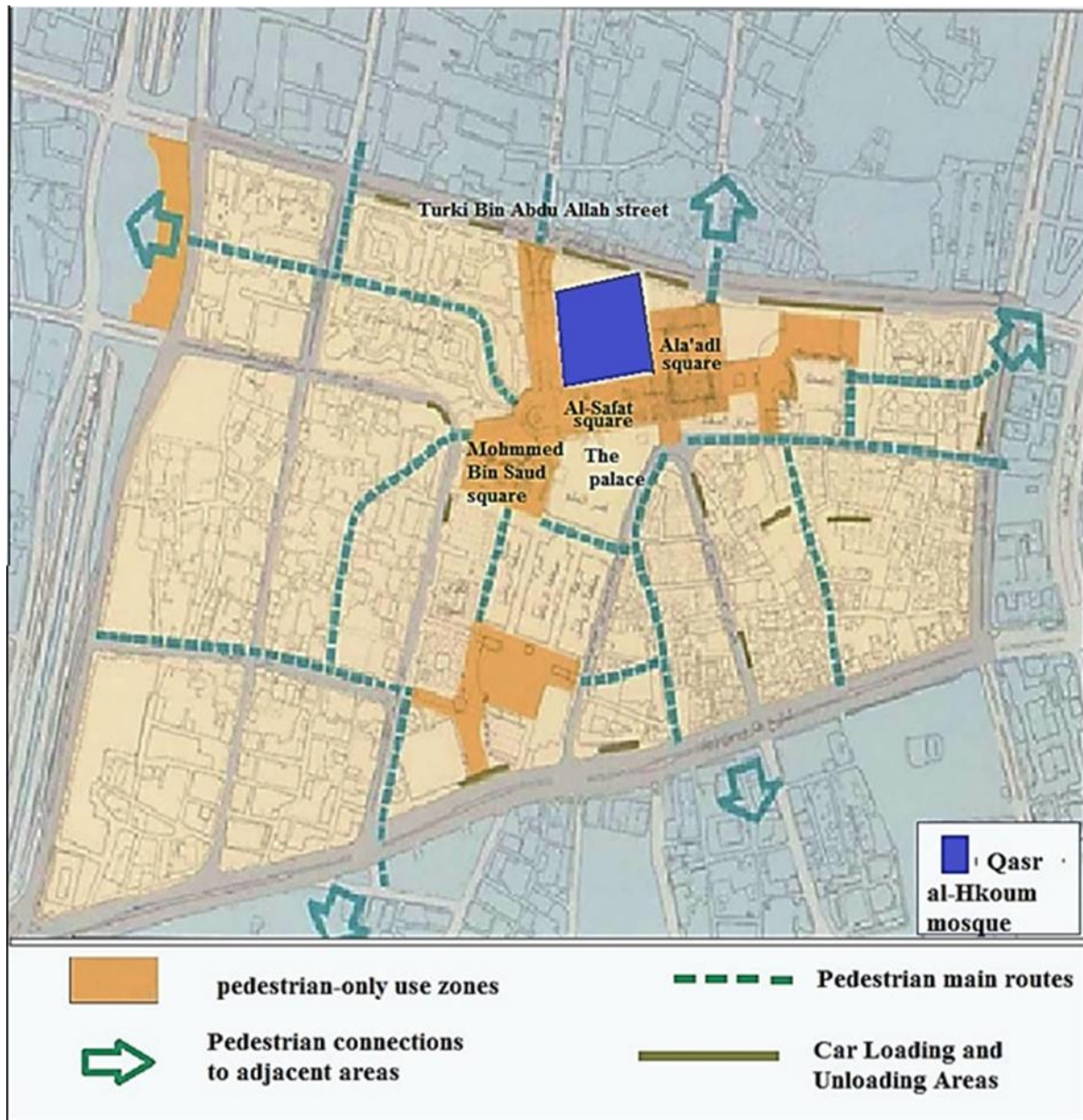
Figure 7.37: Author analysis of the entry points to the Qasr Al-Hkoum district, leading to the mosque. Source of the map: (ADA publications, 1998, p. 23.) (Text added by the author.)

By this sequence of movement, the squares acted as transitional spaces connecting the worshippers coming from all of the four main roads of the district into the mosque. The indirect accesses are related to the pedestrianised main routes that are spread over the area from the surrounding streets, through interior streets and areas dedicated for car loading and unloading spaces.

To address this critical urban issue, the architect (2012) described his approach as 'I was searching for a "network", leading to sacred place- would be in the form of street, plaza? – In my mind, I returned to the old mosque, which is no longer there, so I can derive from it some elements. How do I express about this mosque through the language of this place and avoid literal translation?' There are two spatial elements that the architect adopted in order to avoid any impositions that might be caused by the monumental scale of the project, and at the same time to bring it into human scale; **firstly**, the architect introduced the open squares which connects to each other; reflecting 'fluidity' in their urban system. By this sequence of movement, the squares acted as transitional spaces connecting the worshippers coming from all of the four main roads of the district into the mosque. The spatial order of these squares, also correspond with the location of the main entrances of the mosque, which can reduce the walking distance from the entry points of the district to the mosque entrances.

secondly, he used the wall-arcade at the north and the west side of the mosque, that runs parallel to the Qibla wall, which was influenced by a Friday mosque in Al-Dir'iyyah, and this spatial element was described by Badran (1988, p. 157) 'using an arcade system for the mosque also had the advantage of being appropriate for a large mosque because it adds human scale and breaks the space into smaller spaces convenient for human gatherings, a lesson we had learned in Baghdad'.

The open squares also provided an opportunity to host social activities, as the architect (2012) stated 'because of the mosque, the city had to start a weekly program for the open squares'. The

imam Mohammed Bin Saud square, which was built on the ruins of the Al-Sedrah old market, was landscaped with patterned paving, date palms, and units of lighting fixtures that resemble palms in form. In addition to shaded seating areas, water features of jet-sprays and water fountains (Figure 7. 38).

Figure 7. 38: view of Al-A'adl square, showing the shops lined at the south of the square. Source: (Photo commissioned by the author).

7.6.1 The Qasr Al-Hkoum mosque's architectural composition and language:

The mosque's main spatial layout consists of: main prayer hall, interior-open courtyard, women prayer gallery at mezzanine level. The mosque also, has two square plan minarets that rise to 45-meter height and positioned at the north and south eastern corners of the of the prayer hall, which indicates the Qibla direction on the city level (Table 7.39).   These two minarets, were inspired by the minarets of the Al-Dir'iyyah mosque (Figure 7.40).   There are no domes, as they are associated with mausoleum and tombs structures according to the Wahhabi faith traditions in Saudi Arabia.

Total site Area M2	Ground floor area M2	Total Floor area M2	Infill area M2	Cost (without land)	Internal Height of Main prayer Hall M	External height of Main prayer Hall M	Main prayer hall capacity (men)	Women Prayer hall capacity	External prayer spaces. (squares) capacity
17,000	12,000	31,000	3,000	$ 53,333,33 3	13.50	20.OO	10,000 Persons.	2,000 Persons.	5,000 Persons.

Table 7.39: Qasr Al-Hkoum mosque's building data. Source: (Great Mosque and Redevelopment

of the Old City Centre Project Brief. Compiled by the Aga Khan Award for Architecture. Geneva:

Aga Khan Award for Architecture, 2013, p. 5-12).
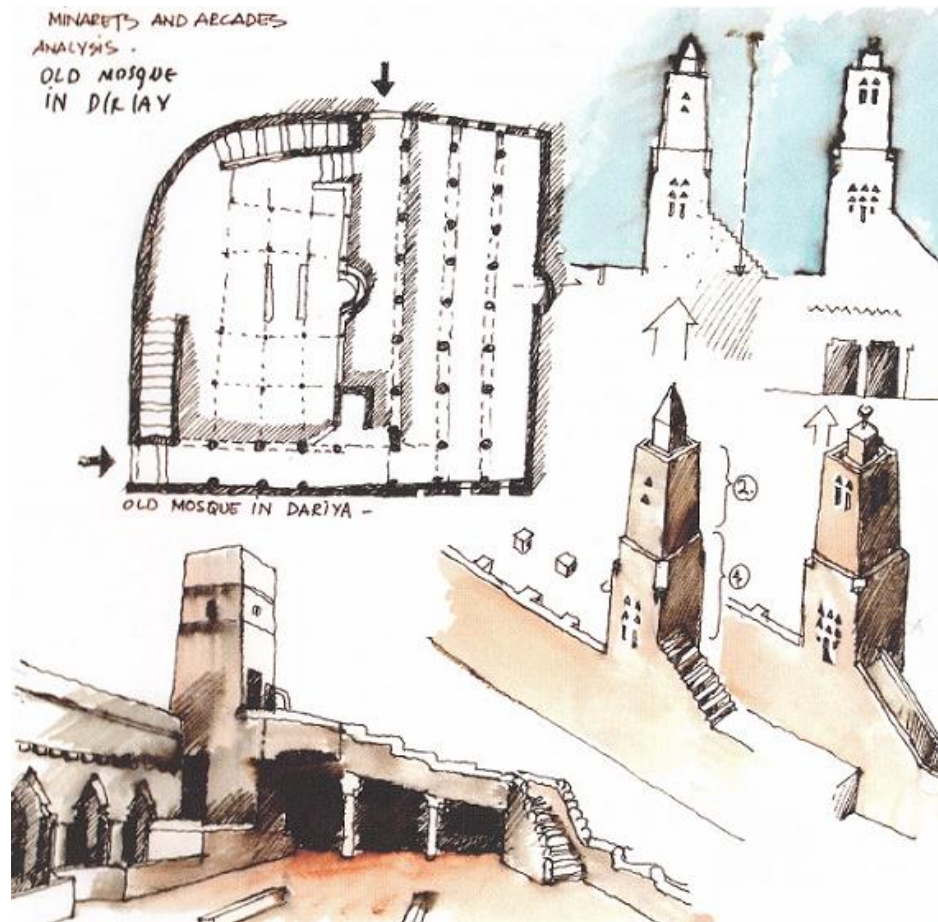
Figure 7.40: The architect's sketches of analysing the minaret's formal language inspired by Dir'iyyah old mosque. Source: (provided personally by Badran, 2012).

The hypostyle, columned prayer hall was designed based on geometrical grid of nine by nine meter, which is similar to the arrangement found in the traditional mosque of Najd (Figure 7.41). According to the architect, 'we formed a geometric network using a series of repeated post-lintel arcades that ran parallel to the direction of the Qibla. The system is reminiscent of that used in many of the local traditional mosques, including the al-Diriya mosque' (1998, p. 157). This system was also adopted by the architect in the state mosque of Baghdad, where the architect benefited from design process learning outcome which played a major role in the design of the Qasr Al-

Hkoum mosque, as he stated, 'in our design we relied heavily on our experience with Baghdad project' (ibid).

Figure 7.41: View of the main prayer hall, showing the columns design, inspired by the keel arches, also the wooden beams and ceiling. Source: (Photo commissioned by the author).

Figure 7.42: The architect's study of the lighting, ventilation tower and air conditioning systems. Source: (Provided personally by Badran, 2012).

The Arcades in the prayer hall, are built with a design inspired by keel arches, which recalls those of Al-Dir'iyyah mosque and the previous historical mosque of Qasr Al-Hkoum. The round columns structure and wooden beams were designed to incorporate the ventilation ducts of the non- central air conditioning units on the flat roof (Figure 7.42). This type of installation was the responsibility work of Buro Happold consultants, according to Badran (2012) 'this method of installation was my idea and I have directed the electrical engineers to apply this technique.' Therefore, there was no need to use a suspended ceiling, which allows the roof structure to be exposed. However, 'this method of resolving lighting and air- conditioning requirements has been adopted by other architects such as Bofill in his entry for the Iraq State Mosque competition, and is also used in the Islamic centre in Rome' (Holod and Khan, 1997, p. 133).

On other hand, openings for ventilation and lightings, are placed above each columns head, to allow the natural lighting and circulation of air, this was intended by the architect to provide spiritual feelings during the prayers, and furthermore, it seems as replacement of the dome element over the prayer hall. According to Badran (2012), 'the ventilation system was inspired from Al-Masmak, and it is considered to be the most conservative in energy use in Saudi.' Also, each air-conditioning units can be controlled individually, which leads to reduction of energy use and operating cost. This system of openings was also used by Badran in his design of the state mosque of Baghdad.

The mihrab, is designed by a rectangular form, concave into the Qibla wall, with a blank wall built up by locally limestone of brighter colour than the rest of the prayer hall walls. It is noticed that Badran avoided the use of calligraphy of Qur'anic verses that is usually common to decorate the mihrab walls; alternatively, he used the interior lighting to emphasis the mihrab without causing interrupting of its architectural language, which harmonised with interior of the prayer hall. A wooden minbar is constructed to the right of the mihrab and can be accessed by the imam from the interior of mihrab (Figure 7.43).

Badran used local limestone material in the building outer walls. This wall became as a climate filter that allows the air to penetrate through it- and with minimum of openings- at the same time protecting the mosque's interior from the harsh weather conditions of dust and heat. Also, it provokes the memory of original construction materials of the old mosque.
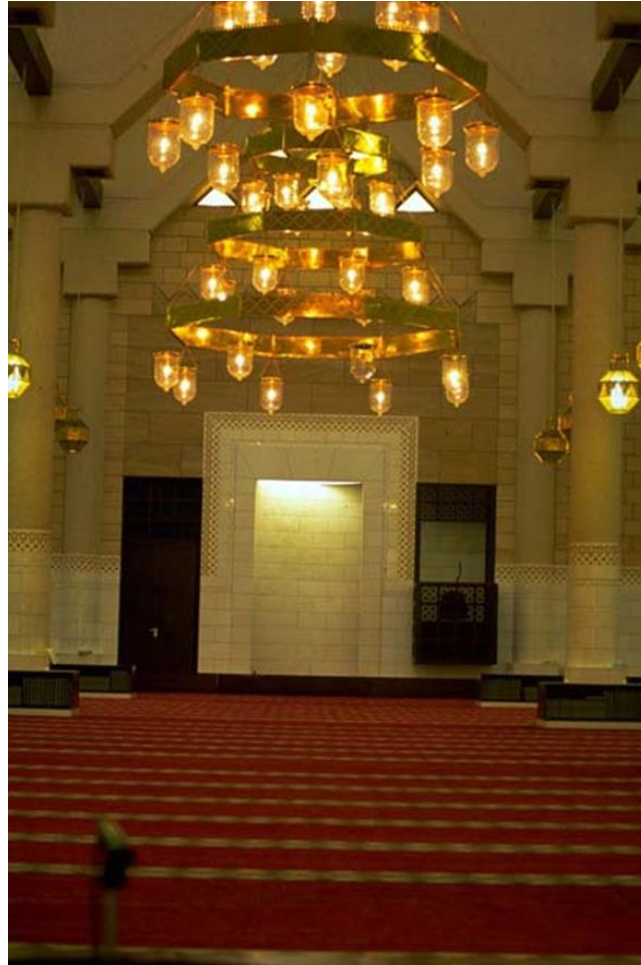
Figure 7.43: View of the mihrab and the minbar. Source: (Aga Khan Award for Architecture).

The main construction material used in the mosque was prefabricated concrete units. The architect used local limestone to face the exterior walls and the upper portions of the interior walls. The lower portions of the interior walls and columns are covered by imported white marble. In the ceiling, he used a locally produced gypsum boards with imported wooden beams, the slab was textured with strips design to create an effect of wooden ceiling that was used for the ceiling of the traditional Najdi architecture (Figure 7.44).

Imported polished marble and granite, were used for the flooring, while the prayer hall is covered with locally fabricated custom-made carpet. Doors and screens are mainly made of imported wood.

Figure 7.44: Interior courtyard of the mosque, with the minaret at the back. Source: (Photo commissioned by the author).

The architect indicated he faced some resistance to the use of prefabricated concrete units in the building of the mosque, as some argued at ADA, that this would be against traditional Islamic architectural methods. Nevertheless, he insisted in the use of prefabricated materials as he believes that it is in line with natural progress of the learning without offending the sense of rationality and tradition.

7.6.2 The spatial analysis of the Qasr Al-Hkoum mosque

The spatial analysis of the mosque is illustrated in the (Figure 7.45).
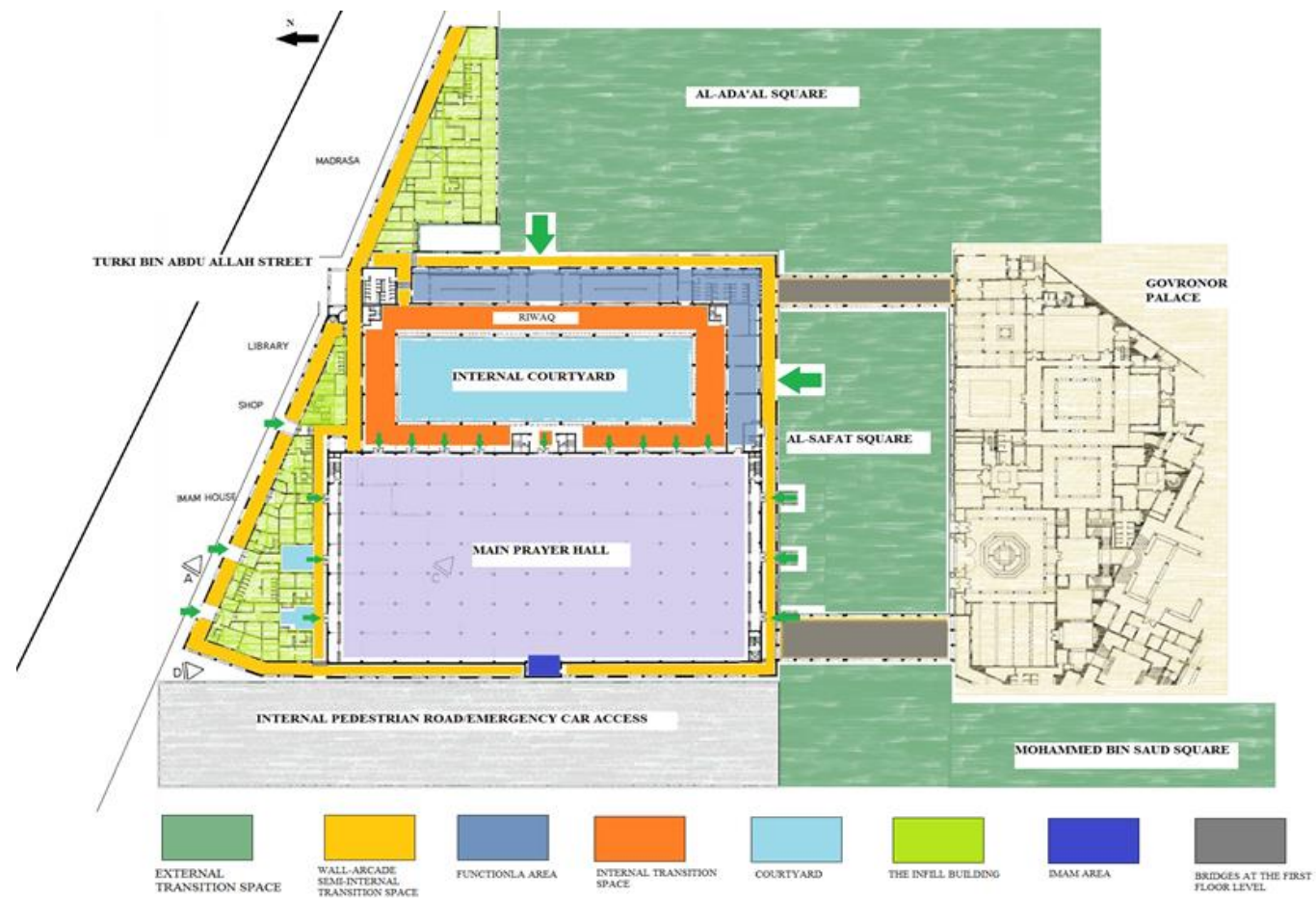
Figure 7.45: Author's spatial analysis of the mosque ground floor plan, with space categories indications. Source of plan: (Aga Khan Publications, 1998). (text and colour added by the author).

The First category is the external transition spaces, which includes the three squares that are connected to each other, but also act as a physical link to the mosque, directing the worshippers from all sides of the district's areas to the mosque's main and secondary gates. There are two main entrances to the mosque; one is located on the east side of the mosque, accessed through Ala'adl square and opening into the internal courtyard. The second main entrance is located on the southern side of the mosque, facing the governor's palace entrances, and can be reached from the Ala'adl and Al-Safat squares. There are also, three more secondary entrances that opens directly to the main prayer hall, located at the south of the mosque in alignment with the second main entrance.

At the north side of the mosque, there are three access entries from Turki Bin Abdullah Street, leading through the corridors of the infill building to the main prayer hall via two spatial spaces; two internal courtyards (internal transition space), and a wall-arcade (semi-internal transition space).

The number and the location of entrances, indicates the architect's approach to provide the best possible accessibility to the mosque within the district area and from the main street at the north. Also, giving the scale of the mosque and the fact that this mosque is the state mosque of the country which hosts social and political events such as Eid occasions, funeral of the royal family members and government's officials, therefor the number and distribution of the entrances are logically justified.

Second category is the wall-arcade- which as mentioned earlier, is a spatial element in the design that was added by the architect to replace a cultural central; a missing original component of the urban planning of the Qasr Al-Hkoum project competition. The arcade is built all around the mosque and acts as a semi-transitional space between the three squares, the north main street, the west road (public spaces) and the building's interior (sacred spaces). While the arcade provides

privacy and noise reduction, it is also accommodating the shopping units, echoing the image of the old market near the first mosque. By doing so, the architect re-established the connecting links between the commercial, socio-political and religious activities evident in the past.

Third category is the internal transition spaces. Which covers the main internal courtyard, located to the east of the main prayer hall, and can be accessed from the outside through a singular riwaq, which represent another internal transition space. In addition, the main internal courtyard is connected to the prayer hall by nine doors.

Fourth category is the infill building; a three-story building at the north of the mosque, separating the mosque interiors from Turki bin Abdullah road, but at the same time connected to it through the interior alleys and courtyards at the ground level. On the upper levels the mosque is connected to the infill building by bridges over alleys resembling the old spatial arrangements of the old city of Riyadh. The infill building was a design solution the architect adopted to avoid the monumental scale of the mosque, and to provide a symbolic and physical connection with mosque and its ancillary functions.

Fifth category is the Imam area, which can be confined into the mihrab area and the wooden minbar that can be accessed by the imam through the mihrab concaved space. Since there are no domes built in the mosque, the mihrab acts as the focal point of the prayer hall positioned in linear dimension with prayer hall emphasising the direction of the Qibla.

Sixth category is the functional areas on the ground floor level, such as the male's ablution facilities, storage room and shoe racks room.

Seventh category is other spatial elements represented by the two main bridges on the first level, which connect the mosque building with the palace. This seems to be a literal quotation from the old mosque, typically used by the governor and the palace's officials.

GRAND MSOQUE

FIRST FLOOR - SCALE 1/600
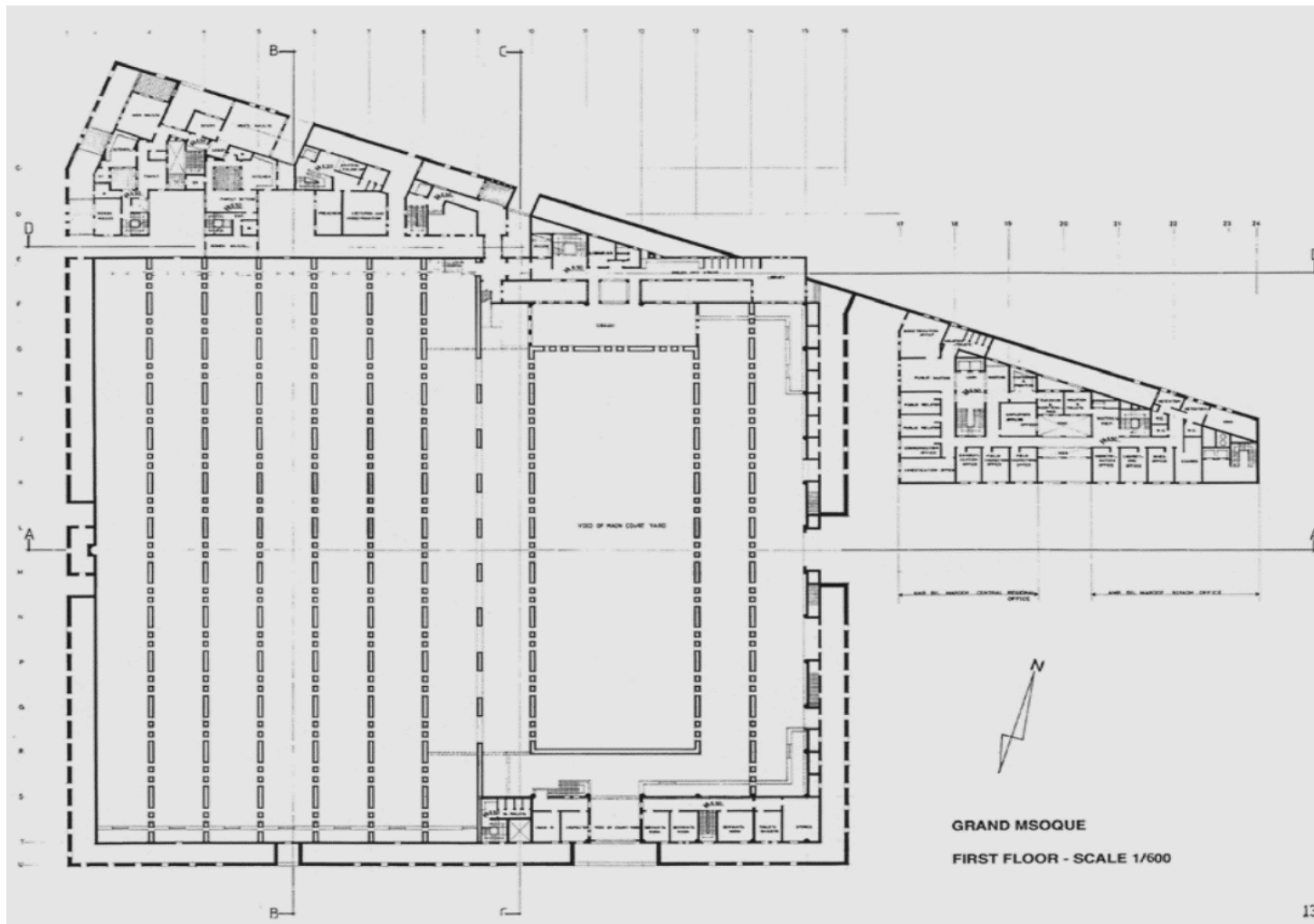
Figure 7.46a: Ground floor plan of the mosque. Source: (Great Mosque and Redevelopment of the Old City Centre Project Brief.

Compiled by the Aga Khan Award for Architecture. Geneva: Aga Khan Award for Architecture, 2013.   p.13).
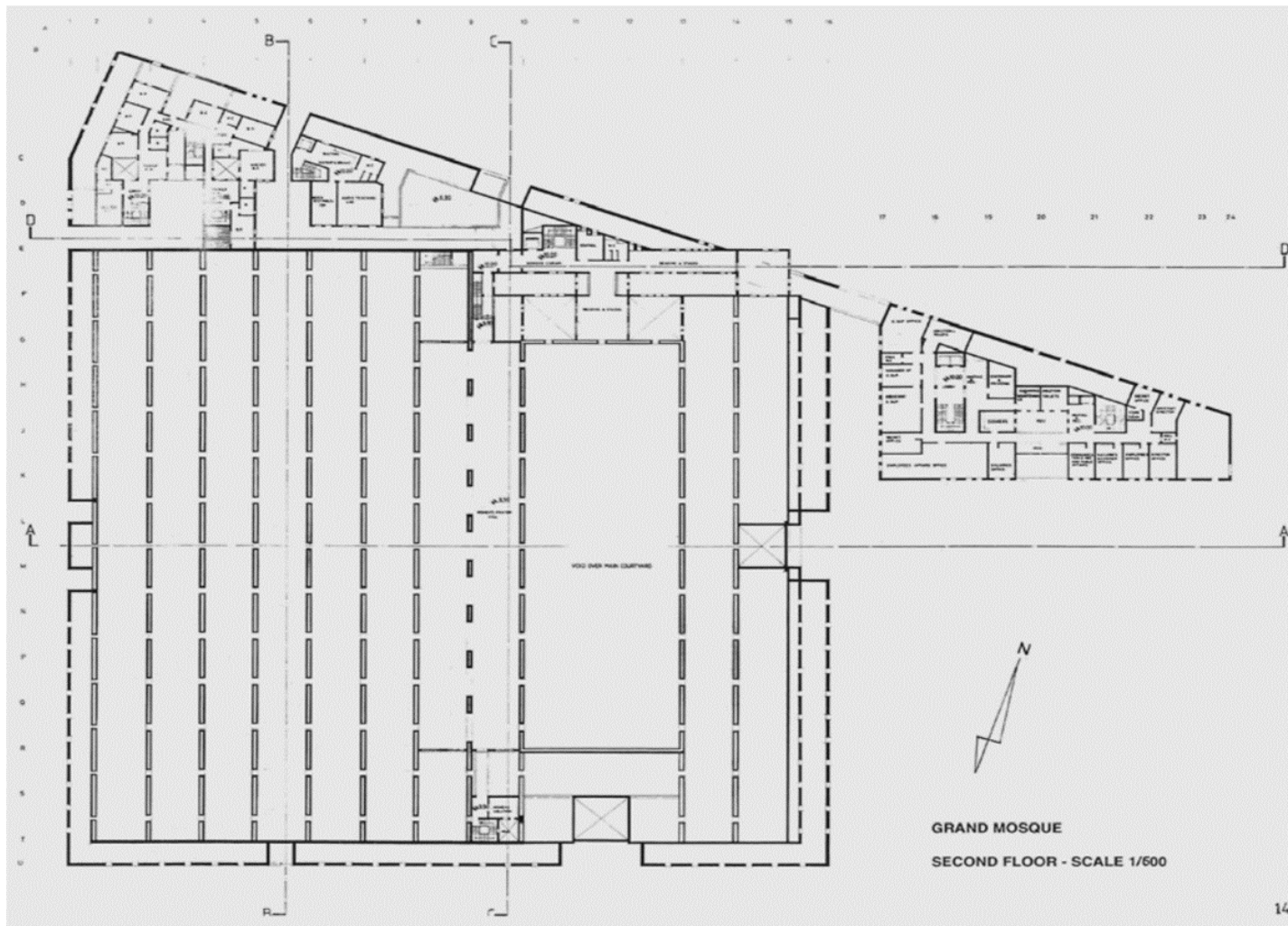
Figure 7.46b: Second floor plan. Source: (ibid, 2013. p.14).

NORTH ELEVATION
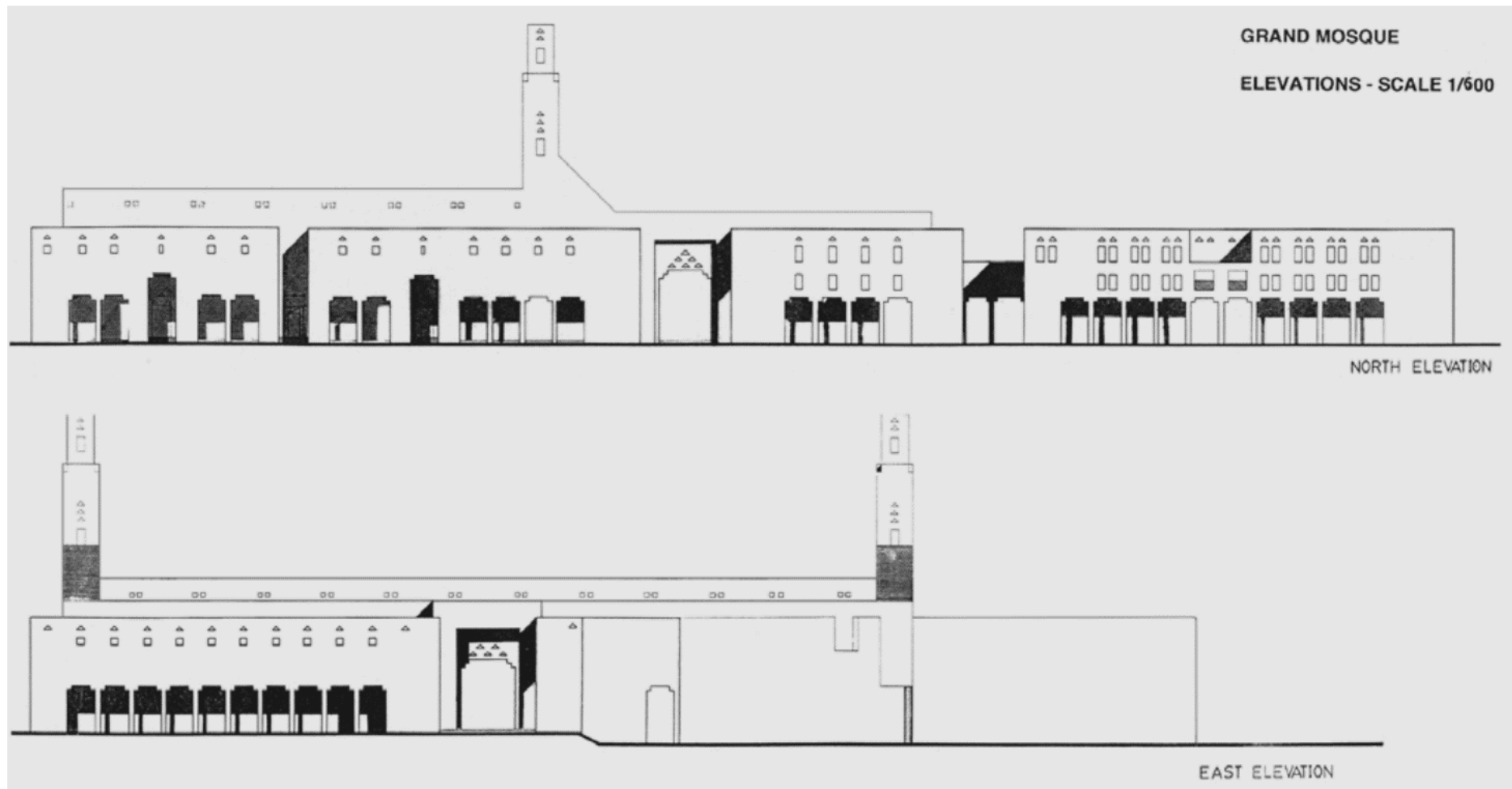
EAST ELEVATION

Figure 7.46c: East and north elevations of the mosque. Source: (ibid, 2013.p. 16)

GRAND MOSQUE

ELEVATIONS - SCALE 1/600

WEST ELEVATION
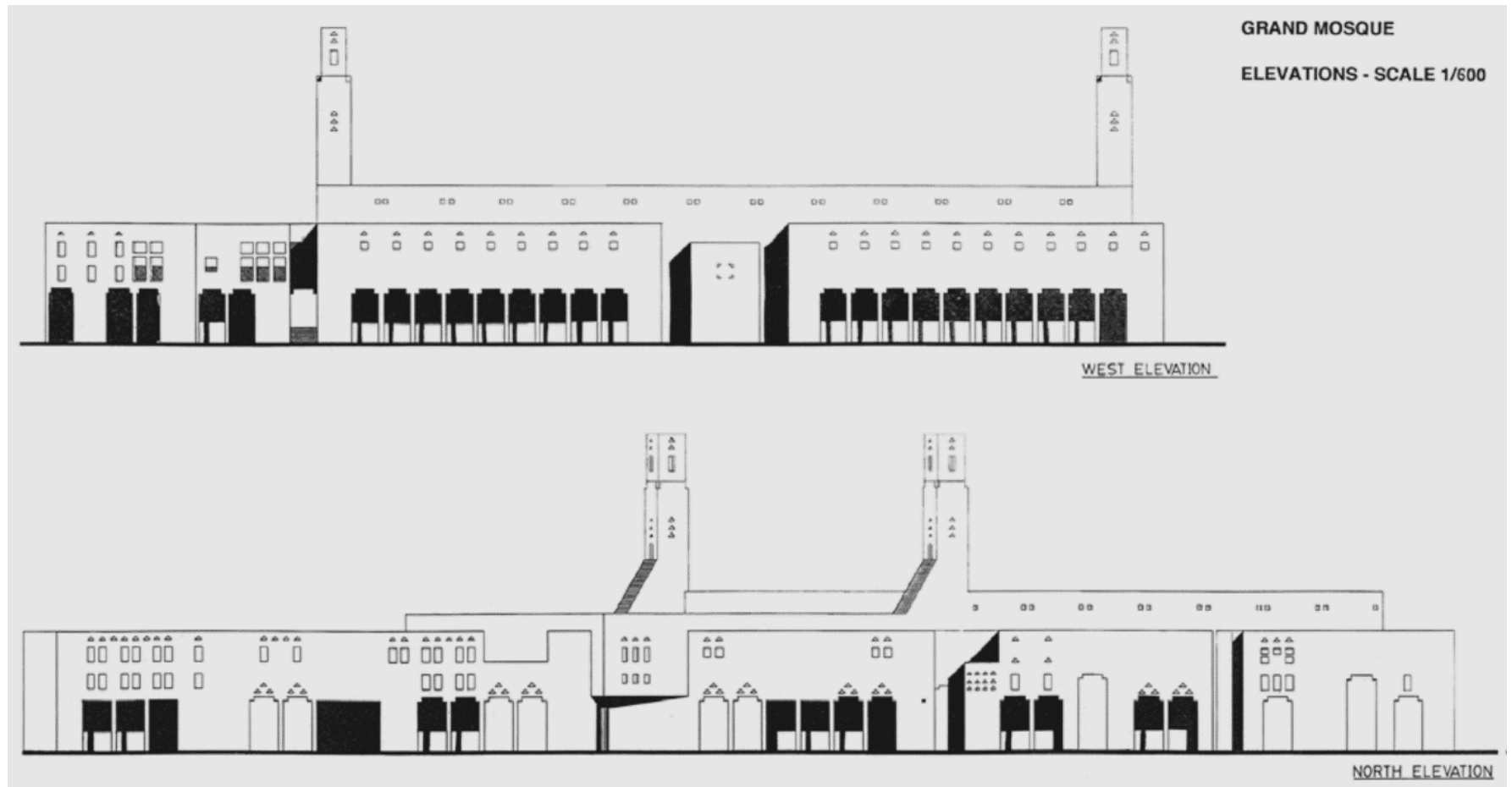
NORTH ELEVATION

Figure 7.46d: West and north elevations. Source: (ibid, 2013.p. 16).

7.7 Conclusion

The design of Qasr Al-Hkoum mosque, indicates Badran dependency on the historical precedents of Najdi architecture, in terms of its stylistic and programmatic framework. It seems that Badran, placed all of his attention on the traditional urban fabric and the typology of the Najdi architecture, by taking into greater account the cultural symbols, such as; courtyards, squares, keel arches, interior alleys, bridges over the alleys and the Najdi adaptation of triangular and square openings. Nevertheless, the spatial and the formal languages of the project, reflects the architect deeper understanding of the social, cultural and environmental issues of the Najd region.   During the process, he also aimed to find a balance between the traditional and contemporary technologies.

 According to the architect (2012), 'the accurate way in how to deal with sacred space is, to be humble and not approach it as celebrative monument'. Therefore, he utilised a design strategy to provide, what he called 'an urban envelope', in which he reintroduced hierarchy of transitional spaces in forms of squares, courtyards and getaways. While these spaces connect the mosque with urban fabric of the city on one level, it is also acted as architectural elements that 'humanised' the scale of the whole project (Figures 7.46a, 7.46b) and (Figures 7.46c, 7.46d).

In interview with the architect (2012), described his work on the project, and the different narratives he wanted to create with its link to the social fabric and the urban context, he used the phrase 'my work constitutes a city'. And to understand the meaning behind his statement we can look to his Baghdad project, where Badran's design engaged with creating urban spaces that incorporate the mosque as part of its architectural program not as isolated building. The analysis of the Qasr Al- Hokum mosque, also reveals the futuristic vision of the architect, as it can be seen in the spatial arrangement of the governor's palace and the open/public squares surrounding it. The architect (2012) explained further; 'I have implanted "hidden scenario" in

my design. By asking the question of how to provide the mosque with conceptual framework that goes beyond its traditional conceptual framework; if the governor's palace turned to be a political museum in the future, it will serve as a contemporary cultural centre that will retain the project to live through time'. The mosque as built with interrelationships with the palace- as discussed in the chapter- is affirming of the architect ability to achieve a sense of continuity of the project linking the past, present, and at the same time offering it the opportunity to adopt to the future socio-political changes.

In his article titled 'On the poetics of place: The Communicability of an Architectural Image', Badran (Petruccioli and Pirani, 2003, p. 105), discussed his two projects; the Qasr Al-Hkoum and Al Kharj mosques and argued that 'our interest was the preservation of the moral and social understanding of the culture by developing a dialectic framework upon which we then placed a vague semiological image of the past by reading its underlying values'. This exemplifies Badran philosophy in seeking to avoid architecture language frozen in time, as he seeks continuity from the past, present into the future.

While Badran always indicated that he takes measures to ensure that the local culture and heritage are represented in all of his designs, there were those, such as Nadia M. Alhasani (Petruccioli and Pirani, 2003, p. 110) in her response to Badran's article mentioned above argued that 'the author seems to imply that there is a universal solution to very regional issue'. Badran (Petruccioli and Pirani, 2003, p.110), in his response to her comment, he said that:

> The relationship between architectural expression and the environment in which it evolves, can be seen in a number of many mosque projects in the region. For example, the grand mosque in Riyadh (the city), and the mosque in al-Kharj (agricultural)- both belonging to desert environment, the mosque of Ali Bin Abi Talib in Doha, Qatar (costal location), and the grand state mosque in Baghdad, (religious diversity, rich history, agricultural and urban environment.

The earlier pages of this chapter support his position. Furthermore, the architect aimed to achieve a balance between the tradition and the contemporaneity of the project by four approaches; firstly, he avoided the monumental scale of the mosque as mentioned earlier, secondly, by making the palace less imposing. Thirdly, the use of modern technologies in the mosque was concealed by traditional skin. Fourthly, he manages to maintain traditional appearance by concealing new technology behind traditional skin. For instant; exterior walls, arcades and the installations of air condition ducts and ventilations system.

The architect reached a contemporary vocabulary of the mosque that excluded the traditional image of having dome and high minaret, which he claimed 'does not really play a significant role in the importance of the mosque and its value in the fabric of the city. By way of contrast, I sought to achieve a modest architectural elegance that is more in harmony with urban character of Riyadh' (Steele, 2005, p. 101).

The design of the mosque and the palace, could be seen as restoration of the cultural context of Qasr Al-Hkoum district. In his design, the architect aimed to maintain the cultural identity by relating its urban components with its spatial character in dialogue with the memory and history of the place. His interpretations of the social and traditional fabrics of the Najd region, was the main force that shaped his design approaches. The urban planning of the project intended to awaken the pre-existed; social and commercial activities in the district, by integrating them with the landscaped squares and shops lined along the arced-wall. When he talked about Riyadh mosque (2012), he stated:

> On Friday, it is full of people, family gatherings and picnics, which added a new social value to society. This existed before, but then was lost due to the strict social doctrines which created a coup or interruption. And this urban component (open square/public spaces) is an anti-coup.

Badran (2012) argued that, by taking into consideration the urban context of the project and the activities surrounding the mosque, he managed to change the perception of Riyadh inhabitants. Which was instrumental in changing the social behaviour pattern and not just a reflection of the city inhabitant. It was proactive approach which added to and enhanced people's activities and not just a reactive approach. 'My work is not a reaction to anything, as I think of an integrated concept encompassing all domains. Intellectual, economic and political.'

His cultural prospective into his architecture, permeate as it can be seen that the narratives, history and future visions of the places his project are located played an important role in his selection of the project' spatial and architectural languages.

CHAPTER EIGHT

MOHAMED MAKIYA: CLASSICAL-MODERNIST ARCHITECTURAL LANGUAGE OF THE MOSQUE

8.1 Introduction

The main case study in this chapter is the Kuwait State Mosque (KSM), designed by the Iraqi architect Mohamed Saleh Makiya. Construction began on the mosque in 1977 and was completed in 1985. The approaches and strategies Makiya adopted in his design and the architectural and spatial languages he achieved through the mosque's architectural programme and vocabulary will be analysed. Whilst the state mosque of Kuwait is the main case study of this chapter, the Sultan Qaboos Grand Mosque of Oman, which was built in 1995 and opened to the public in 2001 and was also designed by Makiya, will also be examined with the aim of providing a broader understanding of Makiya's philosophy and ideas about mosque architecture in two different architectural and cultural environments.

The study aims to address and evaluate the methodology and theoretical models used in the design process of these two state mosques. It investigates how the architect responded to the local architectural tradition and language with respect to the urban environments of both projects.

This chapter starts with a brief review of Makiya's career and achievements, followed by an analysis of KSM that looks at the key architectural elements of the mosque design and its spatial organisation in terms of languages and implications. It also addresses the influences of different

regional architectural cultures on the mosque's symbolic elements and forms: the minaret, dome, arches, decoration, crenellations, calligraphy and finials, which reflect the architect's tendency to create a language that can be read as a new, classical-modernist Islamic language. Furthermore, the Sultan Qaboos Grand Mosque of Oman will be analysed using the same methodology, supported by a comparative approach to generate a deeper understanding of Makiya's visions and theoretical framework.

The analysis of this chapter is supported by field work conducted between March 2012 and April 2016, which includes interviews with Kanan Makiya, who was a member of the design team of the Kuwait State Mosque, and Godfrey Heaps, the design architect for the Grand Mosque in Muscat. In addition to photographic studies, drawings and literature reviews of Makiya's work and the literature review of the previous chapters.

8.2 Mohamed Makiya: A Brief Profile

Mohamed Makiya (1914-2015) was born in Baghdad and travelled to England in 1935 to study his A-levels. He later studied architecture and civic design at Liverpool University and completed his studies in 1946 with a PhD from King's College, Cambridge.

Makiya was an influential teacher and author. He founded the Architecture Department at Baghdad University, which he ran until 1968. He won numerous international awards, including one for the Abu Bakr Al-Sadeeq State Mosque, built in 1978 in Qatar. He was also awarded the 2014 Tamayouz Lifetime Achievement Award in architecture, which celebrates the pioneers of Iraqi Architecture. In 1953, he became an honorary member of the Royal Institute of British Architects, and most recently, he received the medal of excellence from Britain's Queen in February 2014.

He designed many projects, including mosques, commercial, residential and government buildings. Some of his projects include the Islam Abad mosque (1970), the Jami' mosque in Rome (1976), Houston Jami' in Texas (1985) and the supreme court building in Riyadh (2001).

Makiya has stated that 'for me, to be following the values of Islamic traditions in architecture, does not mean going backwards, neither copying the past, the tradition is a continuing process. Tradition is dynamic not still. We can generate architectural dimensions from it and we should respect it them' (al-Hindawi, 2013, p. 306). It appears that Makiya considered the traditional forms of Islamic architecture the basis on which he could develop some of his more advanced design principles, including his 'wall bay unit' and 'wall as volume' design principles, which are applied in most of his projects, specifically in the selected case studies in this chapter. His methodology will be investigated later in the chapter.

He affirmed his approach in his interview with Asharq Al-Awsat (Middle East newspaper) published in January 2008, in which he stated that 'every city has its own identity, and if I was asked to build a Jami' mosque in London, I would have given it an English feature. In my opinion, the geography is more truthful than history' (al-Hindawi, 2013, p. 314). However, it seems that he did not follow this approach in the two selected case studies, which reflect more of a regional influence rather than local traditional architecture.

His first major public architecture project was the Khulafa mosque in Baghdad (1961-65), which was commissioned by the Iraqi Ministry of Awqaf. This mosque was considered a turning point in Makiya's career by Dr Khaled Al Sultani (2014, p.12), who wrote a book on Makiya in Arabic titled *Mohammad Makiya: 100 Years of Architecture and Life'*:

> Makiya's career as an architect, has two main stages; the first stage which started since the fifties of the last century and lasted to the time of Khulafa mosque completion in 1963, it is a period of time in which Makiya had been influenced by the local architectural scene and has been developed himself into professional and advanced within his design experience. It is also, where he utilized the traditional

building materials into the fabric of his new design projects, as in the architecture of the residential buildings and other functional buildings. The second stage, was enhanced further by buildings of different functions, which maintained its design solutions by exceeding what is known as 'the new regionalism' where the natural built environment responded in harmony with its own architectural vocabulary and production.

Tracking Makiya's projects, the Khulafa mosque stands as one of the most important achievements of his work for its design qualities and solutions. It represents an addition to the regional architecture and represents the first experience of Makiya addressing a monumental building within its historical and architectural context. The following will examine the Khulafa mosque briefly to provide the main methodologies in design, in which Makiya started to look into the mosque architecture with a new perspective.

Figure 8.1: Khulafa mosque. Source: (Aga Khan Documentation Center at MIT, Mohamed Makiya Archive).

8.3 Khulafa Mosque

The Khulafa mosque was constructed on the site of an Abbasid-era mosque, and the minaret of the Khulafa mosque is the only remaining part of the original mosque, which dates back to the ninth century (Figure 8.1). The minaret was known as the al-Ghazl minaret; another name of the mosque was the al-Khalifa mosque. The date of the original mosque construction is unknown, but the earliest dates were indicated by Arab travellers such as Ibn Jubayr (1145-1217), who 'in 1183, visited Kufa; from there he went to Baghdad, and Mosul' (Lewis et al., 1986, p. 755). In his book titled *The journey of Ibn Jubayr,* which 'he referred to the "al-Sharqiyah"—the eastern side of Baghdad—as an area full of markets, and has three Jami mosques, first mosque is "al-Khalifa" mosque—the caliph mosque, and it is a great mosque with watering's sources' (al-Hindawi, 2013, p. 176). Also, 'Ibn Battuta, the great medieval Arab traveler, visited Baghdad in 1327, he referred to this mosque as being very grand and woven into the palaces of the caliph' (Kanan, 1990, p. 42).

The mosque site is located in the Sabbabigh al-All neighbourhood of old Baghdad, near suq al-Ghazl, hence the name of the minaret. In 1961, the ministry of Awqaf commissioned Makiya to design a mosque with the historical minaret to be included in its architectural programme. One of the main difficulties the architect faced was the land provided by the client, which was, in his opinion, small, and the architect had to develop a design that incorporated the historical and architectural values of the mosque within the spatial constraints of the site (Figure 8.2).

Kanan (2016) recalled this dilemma during the interview: 'if you think of the Khulafa mosque, of course it is very small building, the site is actually being tiny, but you can see it more like a stage setting, it's like-—as my father used to put it— "I had to build a cathedral in an area suitable for a chapel". Meaning, his design intention was to give it a grandeur that the space itself did not allow, that the site itself did not allow'. However, the architect found a design

solution in which he maintained the integrity of the mosque's historical architectural identity as will be discussed in the following pages.

Kultermann (1982, p. 54) described Makiya's approach in designing the Khulafa mosque:

> His 1963 Khulafa Mosque in Baghdad relates new and contemporary parts of existing older forms, such as the old minaret which was made the centre of the total complex. Kufic writings have become part of the new structure and a unity has been reached which never would have been achieved by the employment of exclusively 'modern' forms.
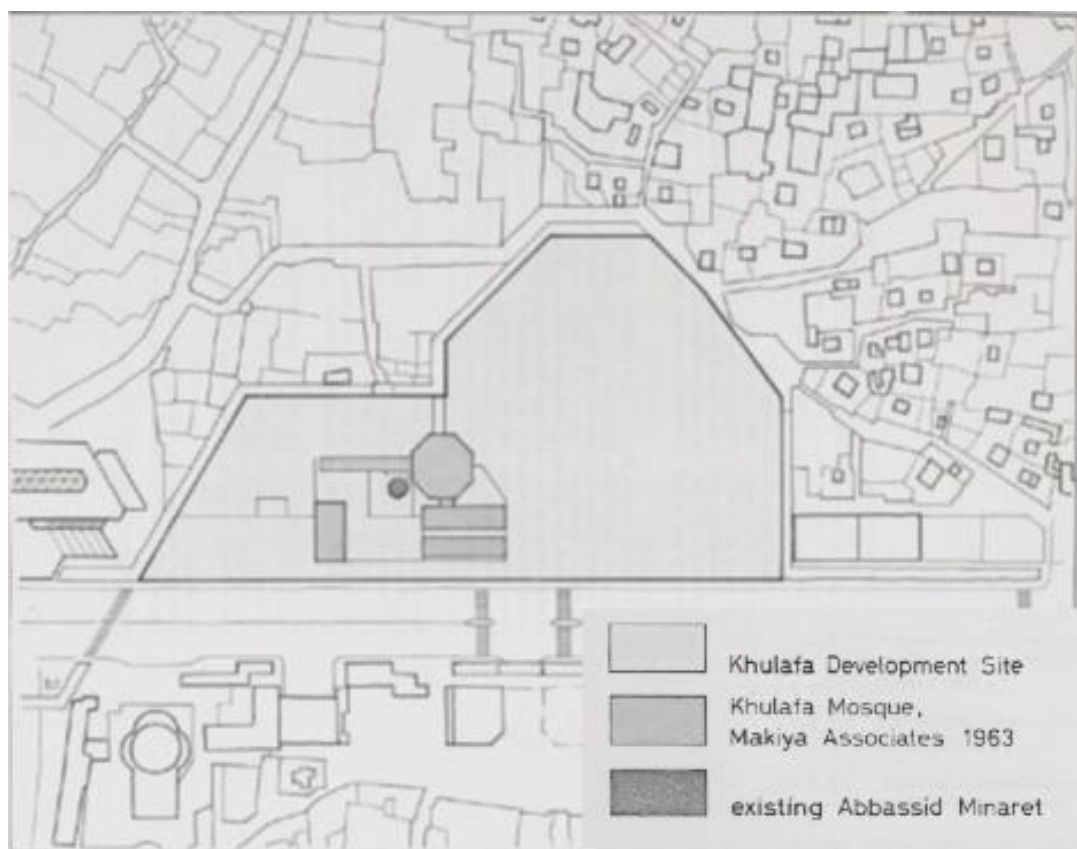
Figure 8.2: The site plan of the Khulafa mosque. Source: (ibid).

The design was composed of four main architecture elements that were designed accordingly regarding the minaret as the main design principle; the main entrance portal, the riwaqs, single prayer hall and open courtyard (Figure 8.3a, 8.3b). First, he dismissed the idea of having a rectangular prayer hall with a central dome as is commonly seen in a Friday mosque design.

Instead, he sought a design where he could place a dome that is proportionate to the 35-meter minaret, and to do so he planned an octagonal shape for the prayer hall covered by a dome, which rests on eight concrete columns (Figure 8.4), 'between which sit freestanding, non-loadbearing U-shaped brick walls. From the outside, eight boxes, not pretending to hold up anything, are set off from the post and beam structure by vertical and horizontal slit windows' (Kanan, 1990, p. 46) (Figure 8.5).
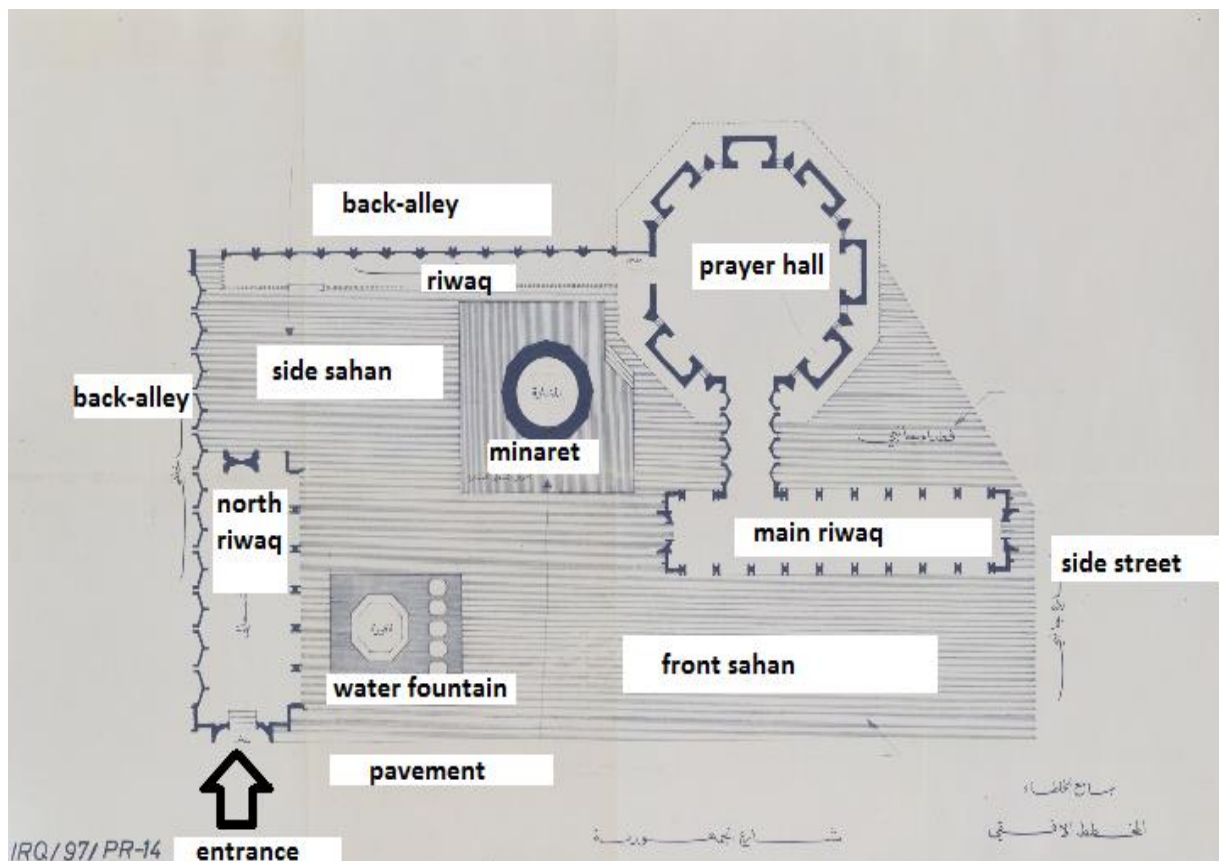
Figure 8.3a: Ground floor plan of the Khulafa mosque. Source: (Aga Khan Documentation Center at MIT, Mohamed Makiya Archives). (Text added by the author.)
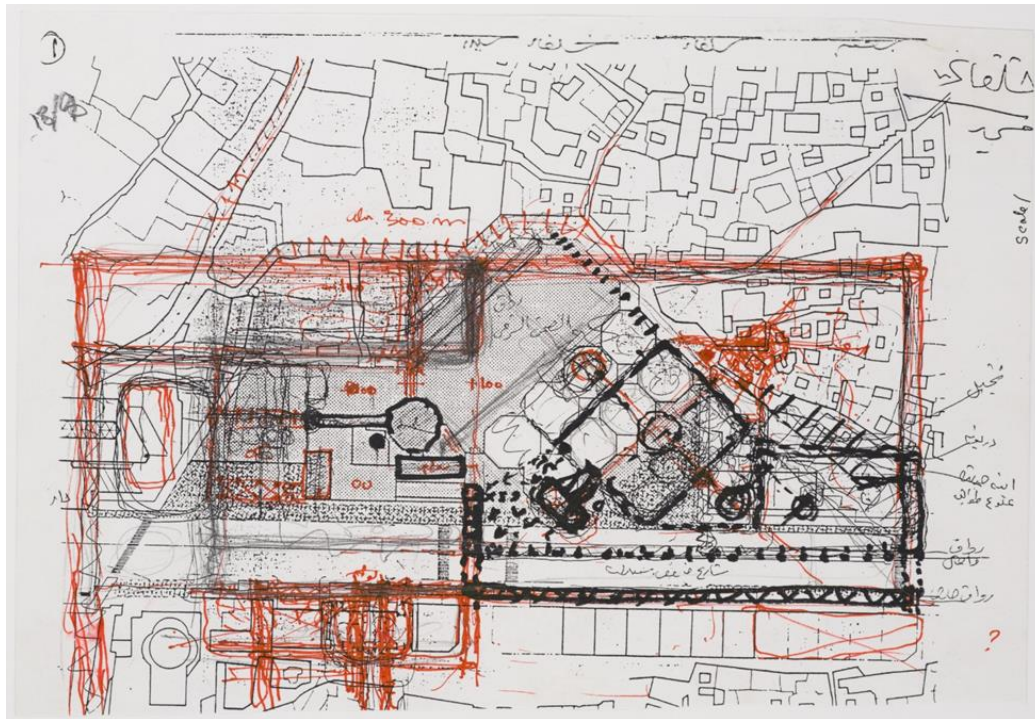
Figure 8.3b: Architect's sketch over a photocopy of the site location plan; area adjacent to Khulafa Street. Source: (Aga Khan Documentation Center at MIT, Mohamed Makiya Archive).
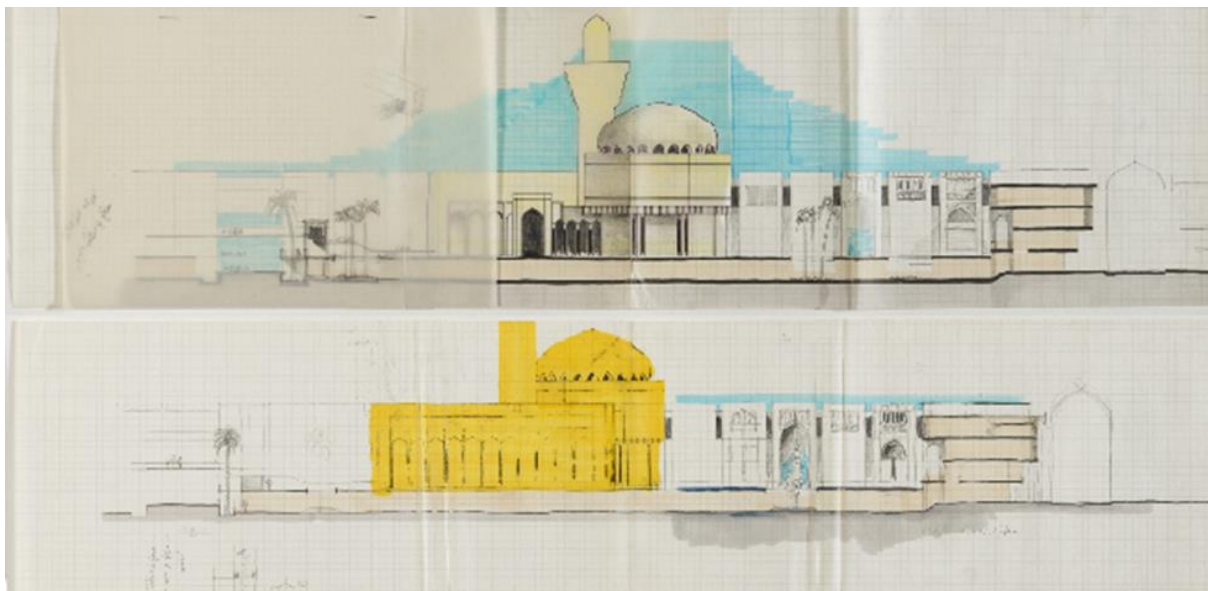
Figure 8.4: Above: Southeast elevation and (below) southwest elevation of original riwaq, dome with curved arches, and minaret, drawing and sketches of adjacent extension buildings. Source: (ibid).

Figure 8.5: Left: prayer hall details of the three-dimensional wall that supports the dome. Right: mihrab concaved unit. Source: (Kanan, 1990, p. 46).

The interior vaulted units of the mihrab shape are projected to the outside by what Kanan described as boxes. This is where Makiya expressed the design principle of 'wall as volume', in which he made the wall become a three-dimensional space. While the mihrab, internally, is not singled out by being projected from the Qibla wall as it is usually done, the architect emphasised it using decorative design that is more elaborate than the other vaulted arches. According to Kanan (2016), who described the mihrab settings in both the Khulafa and Kuwait state mosques as 'that idea of interruption, is of course developed, worked out architecturally, and I think both were equally successful. They bear very close resemblance to one another' (Figure 8.6a, 8.6b).
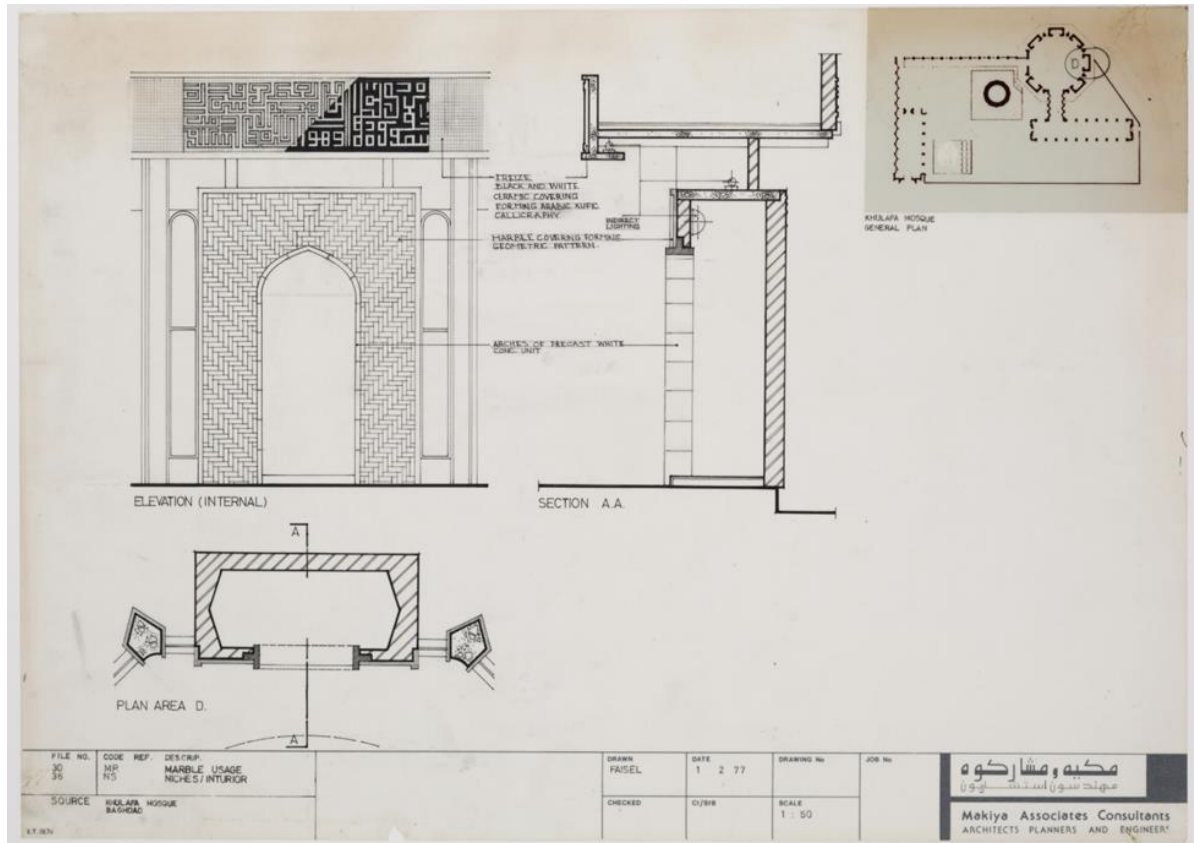
Figure 8.6a: Southeast interior of the dome support wall, arched niche, ceramic frieze and section A-A with materials description, plan area D and location on small general plan. Original drawing. Source: (Aga Khan Documentation Center at MIT; Mohamed Makiya Archive, 1977).

The resemblance can be seen in both the Khulafa and Kuwait State mosques where the mihrab is integrated within the Qibla wall in a repetitive fashion of units. For example, in the Khulafa mosque, the vaulted arches in the prayer hall are the same in dimension and design, except the mihrab is enhanced by more decoration to make it stand out. In the KSM, the mihrab is more elaborate as it is projected from the Qibla wall and framed with rectangular panels, in addition to the excessive decorations of Kufic Arabic calligraphy and ornaments. This will be explored more later in the chapter.

ELEVATION

PLAN AREA H.

KHULAFA MOSQUE
GENERAL PLAN
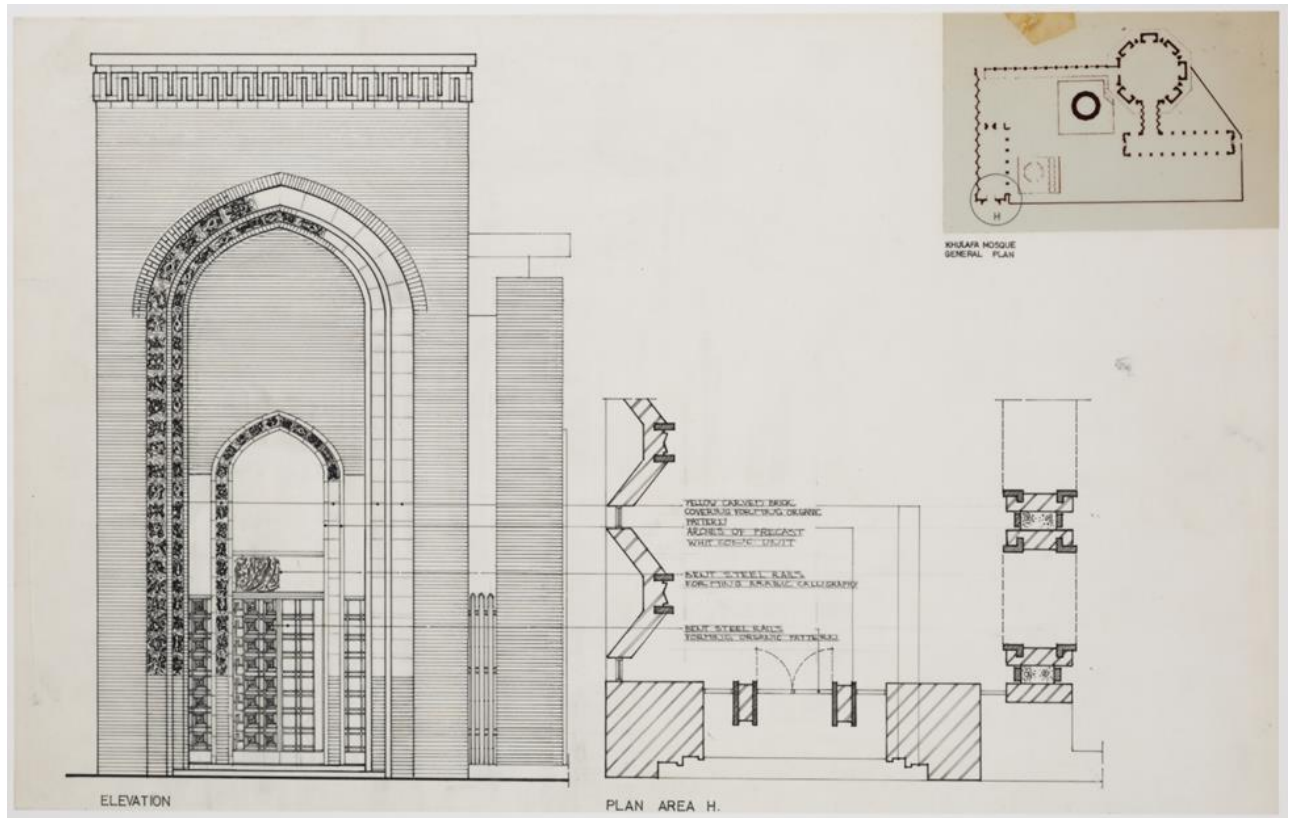
Figure 8.6b: Elevation of the entrance portal with plan of its structural details. On the top right corner, a plan of the mosque. Source: (Aga Khan Documentation Center at MIT; Mohamed Makiya Archive).

Historically, the principle of wall bay units was expressed in some of the old buildings in Baghdad, such as Madrasah al- Mustansiriya, which was built in 1223 by Abbasid Caliph al-Mustansir. The two-story building, which survived and was restored to its original architecture in the 1960s, is organised around a central courtyard (Figure 8.7a, 8.7b). There are three iwans that open into the courtyard and a fourth side iwan that leads into open spaces attached to the main building. The architectural features of the pointed arch entrances and the two superposed tiers of arched units that were designed on the interior facades of the building represent one of Abbasid's main architectural characteristics, which has been a major influence on Makiya's architectural language (Figure 8.8).

Figure 8.7a: Madrasah al-Mustansiriya, before restoration. Source: (Creswell Archive, Ashmolean Museum, neg. EA.CA.6295. Image courtesy of Fine Arts Library, Harvard College Library; archnet.org).

Figure 8.7b: Madrasah al-Mustansiriya after restoration. Source: (Ministry of Iraqi culture website; http://crd.gov.iq).
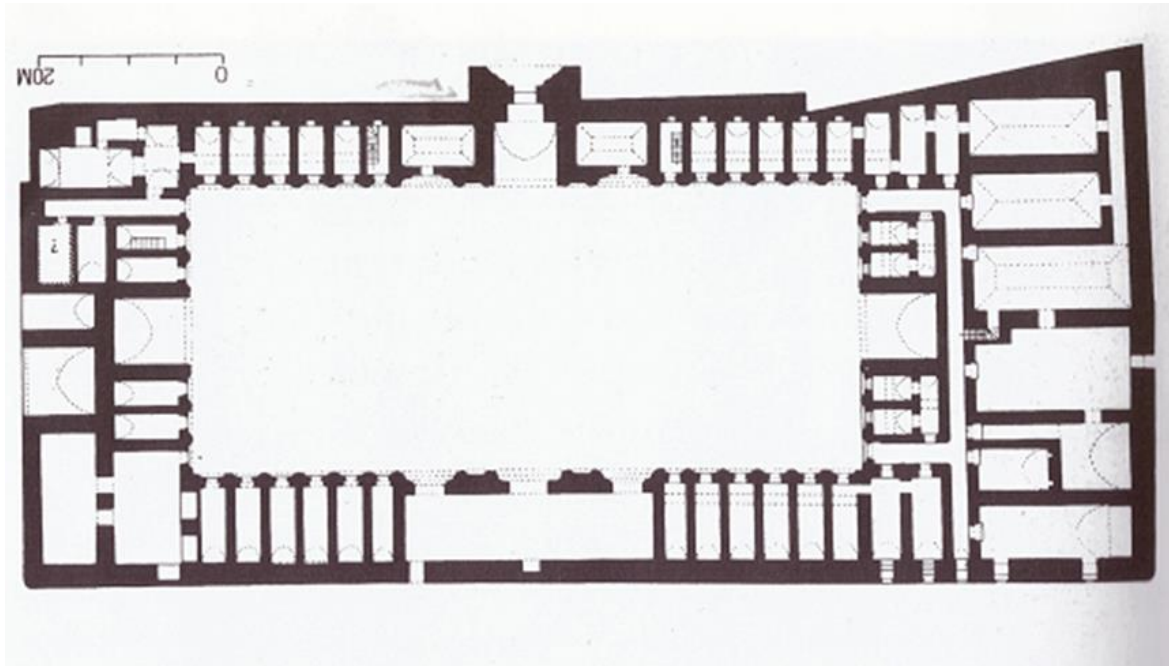
Figure 8.8: Plan drawing of Madrasah al-Mustansiriya. Source: (Grabar, 2001, p.215).

8.4 The Kuwait State Mosque (KSM)

The mosque is located in the heart of the city of Kuwait, occupying a prime location near the Seif palace (the Amir's administrative offices) and the central business area. In 1976, 16 years after Kuwait's independence declaration that coincided with end of the British protectorate in 1961, the Kuwait government began planning to build a state mosque. The government organised an international design competition, to which 16 international firms were invited, with the two finalists being Makiya Associates and Sir Frederick Gibberd of London, the architect of the Regent Park Mosque, which was started in 1970 and completed in 1977. The final decision, made by the Ministry of Public Work, named Makiya Associates the design competition winner (Figure 8.9).

Figure 8.9: An earlier image of KSM as printed on the Makiya Associates Advisors on Architecture brochure. Source: (http://archnet.org/collections/123/publications/10395).

The client was pursuing a design that 'would stand forth as a statement of unity and international identity, using the regional architecture and decorative traditions of Kuwait and the Gulf states as springboard' (Holod and Khan, 1997, p. 81). With a proposed site of 45,000 square metres, the brief requirements for the design were as follows:

> main prayer hall with an area of 5,000 sq. m (53,800 sq. ft) to accommodate some 7,000 male worshippers, a gallery for women occupying 200 sq. m (2, 150 sq. ft), a separate entrance and reception area for the Emir, a library and conference centre, administrative offices, a minaret, and parking for 700 vehicles. A daily prayer hall for up to 500 worshippers was added to the program later. Beyond the functional requirements, the client also requested that the competing architects provide detailed drawings of the structure's proposed decorative scheme. (ibid, 1997, p.81)

According to Kanan (2016), the winning factors in the design competition were the traditional visible skin of the mosque and the modern hidden skin of the interior, which is elaborated by the wall bay units. Kanan explained this more in an interview:

> I think my father's design was more traditional looking on the surface than some other schemes. Only from the outside, but in the inside, the wall bay unit, is not traditional. The wall bay unit is the most interesting and the crucial feature in the project, which might have played the role in the jury's decision.

As mentioned earlier, the wall bay unit is an element of design that Makiya first adopted in the Khulafa mosque and developed it further in KSM. It can be said that the Khulafa mosque inspired Makiya's design of KSM, as can be seen in a number of architectural forms, such as the arches, parapet design and mihrab. This will be discussed in more detail as the chapter progresses.

While Kanan described the KSM design as traditional, there were differing views about the architectural style used in the mosque design, with many in Kuwait viewing it as more representative of Persian or Abbasid architecture (as mentioned in chapter five). Furthermore, it was described by Fabbri et al. (2016, p. 260) as

> ancient Abbasid tectonic is the basis of the state mosque project. In Kuwait, Makiya's research of a modern path to local identity, away from the simplistic translation of traditional shapes into decorative elements, result in a solid work, articulated and quietly monumental which celebrates the Islamic past without overt rhetoric.

It could be said that the architect didn't incorporate much of 'the regional architecture and decorative traditions of Kuwait and the Gulf' as highlighted in the client's brief requirements, and that there is minimal recognition of the local Kuwaiti traditional architecture, as will be explored in the following pages. Kanan (2016) addressed this issue during an interview, arguing that:

there is no monumental tradition of architecture in Kuwait, and this is a monumental building, this is a building intended to make a statement that is usually done not by specifically indirect and informal ways of indigenous architecture, which is not always pre-planned and which develops organically, so to speak, this is preconceived monumental conception, and I think it is the first building (KSM), in which he really moved in that direction. He was later to make many mosques, all of them, I would call monumental.

But, looking at the Kuwaiti historical architectural landscape, there are several buildings with historical importance and a degree of monumentality, which the architect did not refer to in his design of the mosque, or which could have been used as a source of inspiration. For example, the Seif palace, which is located near KSM, is one of the oldest buildings in Kuwait, dating to 1904, and the fort of al-Qasir Al-Ahmar (the fortress red palace) in al-Jahra village, 30 kilometres outside of Kuwait, town, which was built in 1927 during the reign of Kuwait ruler Sheikh Mubarak Al-Sabah (1837–1915), the seventh ruler of Kuwait. In addition to Safat square and gates of city boundary walls.

Additionally, historical mosques, such as the Al Khalifa mosque—which was discussed briefly in chapter four—will be reviewed to provide an image of its architectural vocabulary and characteristics.

In order to understand the traditional architecture of the Kuwait urban environment, a brief review of the sites mentioned above will generate a formative knowledge of its traditional architectural forms and language.

8.4.1 Traditional architecture of Kuwait: brief review

Historically, Kuwait occupied a strategic location at the northwest corner of the Arabian Gulf. It was a seaport for the trade that connected the north Gulf to Persia and the Indian continent by trade routes (Figure 8.10). Other activities that grew the economy of the town were pearling and fishing. Consequently, simple forms of early settlements were created near the seashore

and expanded to the south. These settlements were founded on a site named 'al-kut', which was built 'between 1672 and 1680, Sheikh Barrak Bin Ghuraif of the Bedouin tribe known as the Bani Khalid tribe, which then ruled the eastern Arabia, built a smallish fortress home on the spot' (Casey, 2007, p.2). For which Kuwait is a diminutive meaning 'small fort'. However, it was later demolished by al-Sabah rulers.

The structure of the urban fabric of Kuwait town was defined by settlements of tribal and family areas known as Freej, similar to Muharraq in Bahrain and Doha City in Qatar (discussed in chapter four) (Figure 8.11).

The first town of Kuwait was described as 'modest mud dwellings erected on high ground adjacent to the harbor' (Fullerton et al., 1995, p. 174). Around 1760, the town had its first fortified wall erected to protect its inhabitants against the Bedouin raids from the south. 'The first town was circulating the Seif Palace and occupied an area of eleven hectares' (Alajmi, 2009, p. 96). However, growth of the settlements was expanding to the south, beyond the wall, and a new wall was built in the early 19th century to surround and protect the emerging settlements.

A third wall was built in 1920 after the population grew as a result of immigration of Arabian tribes, who were attracted to Kuwait town because of its economic growth: 'Kuwait experienced a period of unprecedented economic and demographic growth from the 1890s until around 1920 due to a pearling and trading boom throughout the region' (Al-Nakib, 2016, p. 23). And, according to Al- Nakib, the total area incorporated within the third wall was 7.5 square kilometres (Figure 8.12).
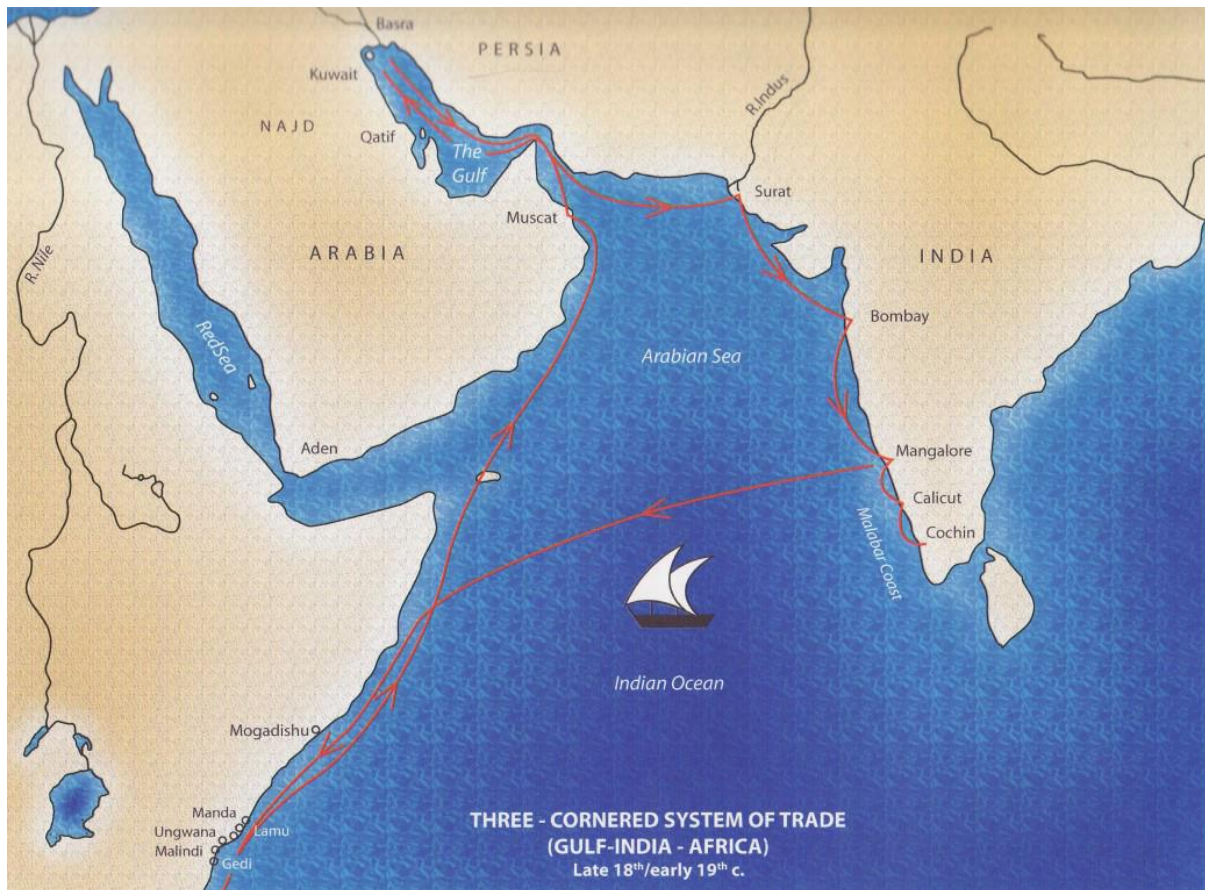
Figure 8.10: Old trading routes in the 18th and 19th centuries. Source: (Lautrette, 2006).

Figure 8.11: Aerial view of Kuwait in 1951. Source: (Kuwait Municipality publications).

Figure 8.12: The third wall built in 1920. Source: (Facey, 1998).

8.4.2 Al Khalifa Mosque

One of the oldest mosques in Kuwait, which has survived for centuries, is the Al Khalifa mosque (Figure 8.13), and according to Alajmi (2009), 'Among the few remaining traditional buildings that were built after the erection of the First Wall in the late 18th century, only one building, Khalifs Mosque in the Sharq area, was built before that date, originally built in 1737' (p. 96). The mosque was described by Lewcock and Freeth (1978, p. 25) as follows:

> The masjid al-Khalifa is a fine mosque on the seafront used by the sheikh and the ruling family… the columns stand on 12 stone bases, and are tapered timber columns, octagonal in plan. The capitals are extremely elaborate with two rows of tassels under stalactites supporting square pads upon which rest beams. The square pad is divided into three horizontal zones, a central plain frieze with a roll moulding and a row of arches below it (i.e., above the stalactites) and a row of three bosses on their face at the top. The mosque has a double-aisled portico in front of a double-aisled prayer hall. There is a *mihrab* in the centre of the wall dividing the portico from the prayer hall. Above it there is a triple arch, and similar triple arch-headed niches frame the regular row of doors and windows which surround the portico. The portico opens on the north-east side to the courtyard of the mosque, which is entered through double doors on the north-west and south-east sides.

The al-Khalifa mosque, which was built close to the Seif Palace, was considered by the Kuwait municipality 'as one of the most complete examples of a Kuwaiti mosque' (Alajmi, 2009, p. 140). The mosque's wooden column capital style can be considered one of the distinguishing elements of the mosque design. Also, the interior of the porch shows the presence of niched frames around the surrounding doors and windows (Figure 8.14), which is typical of Kuwaiti traditional architecture and is also seen in Kuwaiti houses (Figure 8.15). In an article published in *Asharq Al-Awsat* newspaper, Eid al-Ramizan (2001) wrote that 'in addition to its being the only mosque standing for more than two centuries, it was also, the official state mosque during Mubarak al-kabeer rule' (Sunday, 4 February 2001, vol. 8104).

Figure 8.13: Photograph of al-Khalifa mosque in the mid-1950s. Source: (Kuwait old markets,

2004, p.89; Kuwait research and studies centre publications; www.crsk.edu.kw).

Figure 8.14: The columned porch and the arches. Source: (Lewcock and Freeth ,1978, p.72),

and a close look at the column capital details. Source: (Kuwait municipality publications,

1986).

Figure 8.15: Typical façade of an old house in Kuwait; rounded niched arches framing doors.
Source: (Lewcock and Freeth, 1978, p. 70).

8.4.3 The Seif Palace

Located on the seafront, the Seif Palace was originally built on the opposite side of the Sheikh Mubarak Al-Sabah residence. Mubarak, who decided to build a fortified palace complex by adding extensions to the main building that lasted for three years, was connected to the new extensions by a wooden bridge. Al-Nakib (2016, p. 31) describes the Seif Palace: 'by 1912, his palace had become a compound divided into his private residence; quarters for his bodyguards, servant [..] and the *sarai*, or government building', and it was by that time decorated with materials imported from outside of Kuwait such as the floors, which were covered in yellow tiles imported from the town of Al Emara in the south of Iraq. In addition, the external walls and the staircase were built, and doors, windows and wooden arches decorated with stained glass were also added (Figure 8.16a, 8.16b).

The facades of the Seif Palace are the main architectural feature of the building, and they consist of reparative round arches on the first floor, with the ground level façade without windows and wooden doors placed without specific order. In 1917, a staircase was added to connect the ground floor to the first floor, and the wooden bridges were demolished and replaced with new ones built of cement. However, under the reign of Sheikh Abdullah Al Salem (1895-1965), he decided to demolish the buildings at the eastern side of the Seif Palace courtyard and replace it with a new palace, which was completed in 1964. In the east corner of the new palace, a clock tower was built overlooking the seafront, resembling a minaret with its golden dome design (Figure 8.17).

Figure 8.16a: Old photograph of Seif Palace. Source: (Kuwait old markets, 2004, p.89; Kuwait research and studies centre publications, www.crsk.edu.kw).

Figure 8.16b: View from the interior courtyard of Seif Palace. Source: (http://www.da.gov.kw).

Figure 8.17: Seif Palace after restoration. Source: (commissioned by the author, 2014).

There are differences in architectural design, compared to the old palace design; In the new palace, pointed arches are used in the building, for example, the main portal is built of pointed single arch, framed by rectangular blind arch. Windows are framed by the same arch style. It can be said that these pointed arches are similar to Makiya's arches applied in the design of KSM, which is exhibiting more of Persian or Iraqis architecture. Parapet design is also different than the original design found in the old palace (Figure 8.18).

Figure 8.18: View of the portal arch from inside the palace. Source: (commissioned by the author).

8.4.4 Fort of al-Qasr Al-Ahmar in al-Jahra village (Red fort)

al-Jahra was an ancient village on the main traveling route from central and eastern Arabia to Mesopotamia. Barclay Raunkiaer (1969, p. 29) described the town in 1912 as 'a village in flat, open surroundings with about 500 inhabitants. North of the houses there are a few cornfields watered by sherds and couple of date plantations'. The mud-walled fort is rectangular in shape and built with four square corner towers (Figure 8.19). The fort's interior is divided around the central courtyard, with most of the rooms attached to the fort's walls. The exterior walls are 3.5 metres high and more than a metre thick (Figure 8.20). The main entrance has a projecting gate bastion and a singular machicolation above the wooden door, and three bastions on the side wall of the entrance building. The machicolations were also built below the parapet of the corner towers as a defensive tactic. It can be seen that the parapet is similar in design to the Najdi and Bahrain architecture (Figure 8.21).
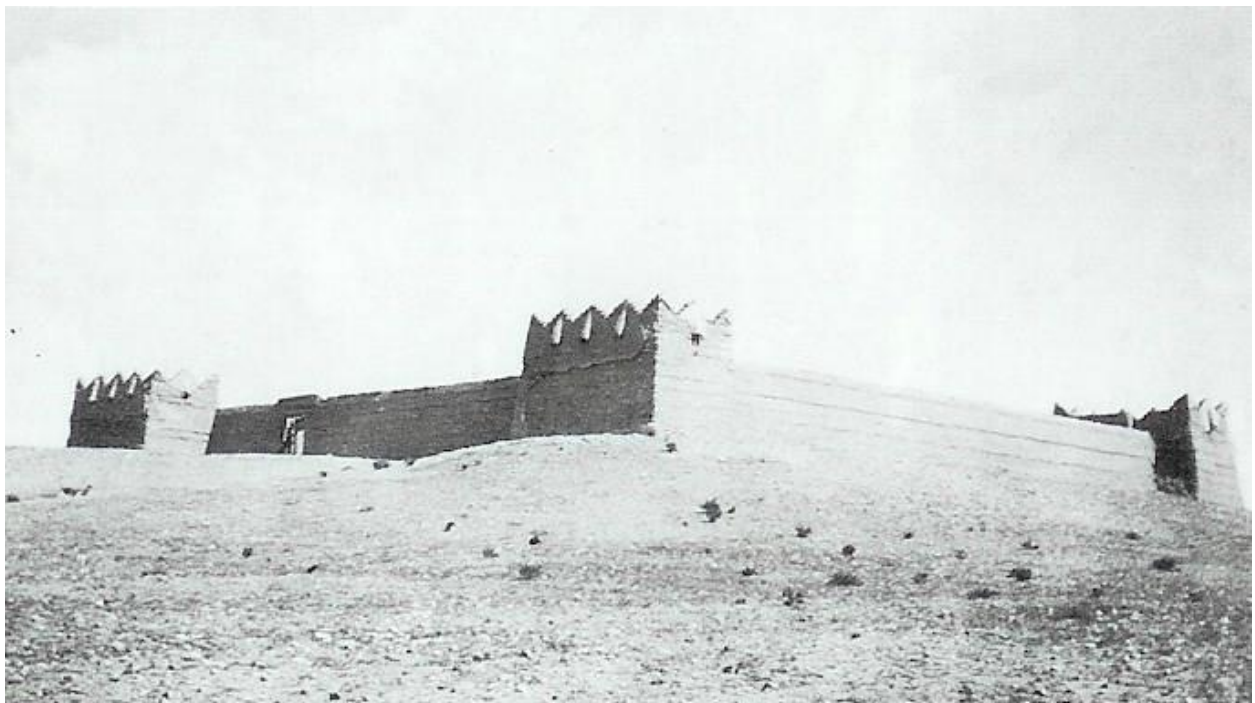
Figure 8.19:   Fort of al-Qasr Al-Ahmar in 1928. Source: (Facey, 1998, p. 74).
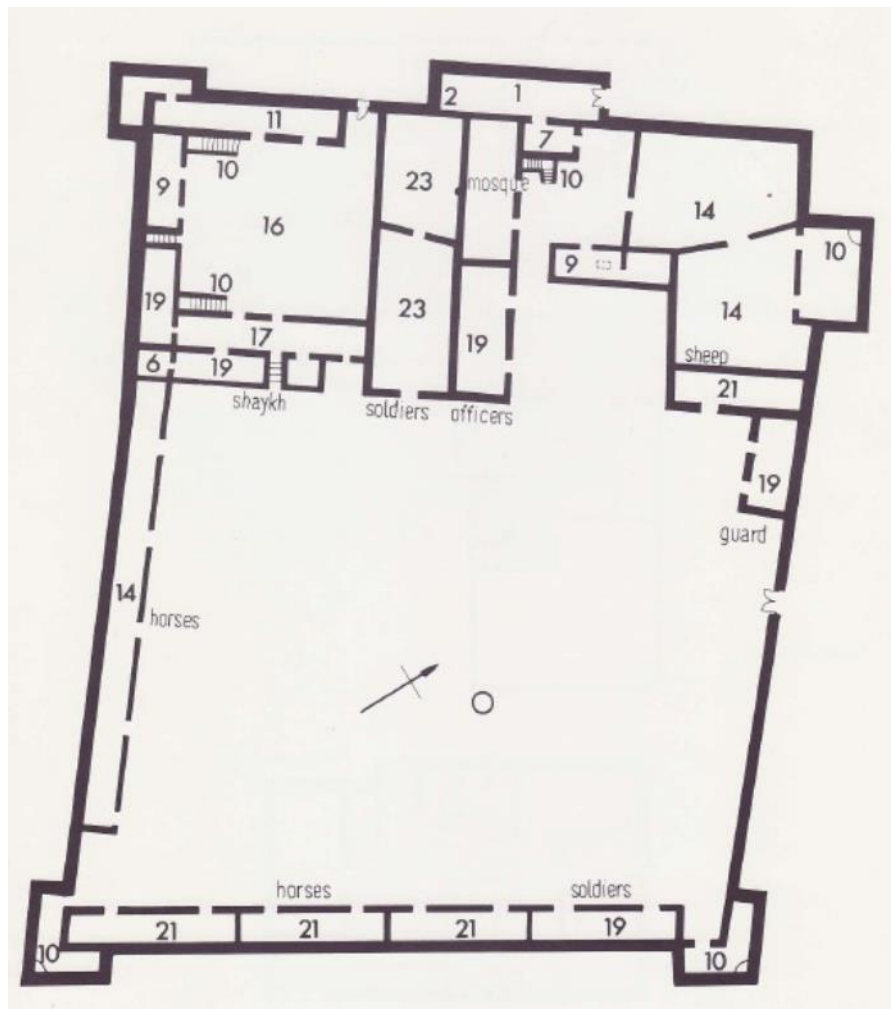
Figure 8.20: Plan of the red fort at al-Jahra. Source: (Lewcock and Freeth, 1978, p. 81).

There is a small mosque built in the northeast interior of the fort, adjacent to the main entrance. Lewcock and Freeth (1978, p. 30) described the mosque as 'like most of the buildings, the mosque is a long narrow mud-walled room without windows; all the light and air that is available inside enters through the doorways, which are relatively high and wide'.

Figure 8.21: Entrance gate to the red fort. Source: (Lewcock and Freeth, 1978, p. 81).

8.4.5 Doors, windows and motifs

Below are some illustrations of different types of doors and motif designs of traditional Kuwaiti

architecture (Figure 8.22), in addition to a brief review of traditional souq mosque architecture.
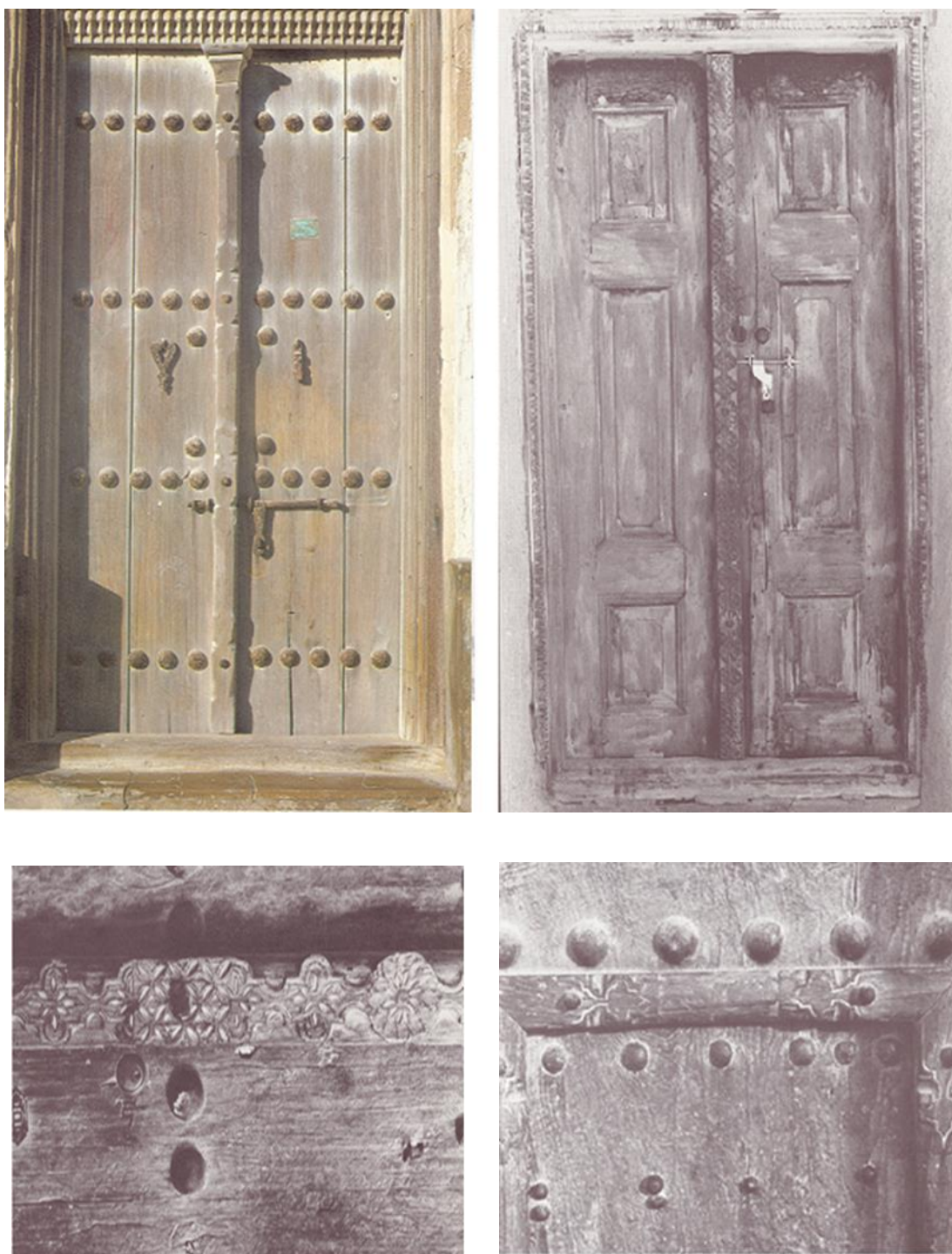
Figure 8.22: Above, typical designs of Kuwaiti doors; below, detail of cover strips of entrance doors of old Kuwaiti houses, engraved with botanical motifs. Source: (Lewcock and Freeth, 1978, p. 16- p.92).

Figure 8.23: Bayt al-Ghanim, a traditional Kuwait house built in 1916. Source: (ibid, p. 145).

Bayt al-Ghanim represents some of the traditional characteristics of Kuwaiti domestic architecture; the row of windows in the men's reception room (majlis) is framed with rounded arches. The door next to the arched windows is built of a flat, niched arch (Figure 8.23). A similar type of window can be seen in the latest version of the **souq mosque**, which was originally built in 1794, was restored in 1839 and had its third restoration work in 1953, in which the mosque was remodelled with a dome and a new minaret added to its structure. In 2008, the mosque underwent a complete renovation by a private donor (Figure 8.24).

Figure 8.24.: Old photograph of the souq mosque in the 1940s. Source: (Kuwait old markets, 2004, p.162; Kuwait research and studies centre publications; www.crsk.edu.kw).

The original design of the souq mosque included a flat-roofed building with a singular minaret that had one main entrance on the north side and two side entrances on the east side, leading to the old market. It also had a south entrance that lead to the mosque's facilities area. All these entrances open into the inner courtyard, which is surrounded by an arcade of fifteen columns. The recent restoration work was influenced by Persian design as indicated by Lewcock and Freeth's (1978, p. 25-26) description of the mosque: 'the minbar was replaced by one of

elaborate modern Persian design. Similar Persian floral decoration covers the arched entrance façade above the doors into the courtyard' (Figure 8.25).

Figure 8.25: The souq mosque after restoration in the 1950s. Source: (Kuwait old markets, 2004, p.163; Kuwait research and studies centre publications, www.crsk.edu.kw).

8. 5 The architectural and spatial program of KSM

The mosque consists of a rectangular, 5,000 square metre prayer hall, crowned by a 26-metre-diameter dome that rises 47 metres above the ground, and attached to the east of the prayer hall is a six column deep entrance portico that separates it from the front open sahan. Above the portico, on the first floor, is the women's gallery, with a capacity to accommodate 500 women.

In addition, the columned portico itself serves as additional prayer space for daily prayers (Figure 8.26).

The fronting main Sahan, which is identical in dimensions to the prayer hall, is surrounded by two riwaqs flanking its north and south sides. The main Sahan can be approached by a third riwaq entrance, which houses the main entrances to the mosque and opens to the ground level car park area. Towards the northwest, a private entrance is dedicated to the Amir, and next to it is a smaller courtyard. Two more semi-enclosed courtyards are attached to the entrance portico's north and south sides, and opens into it through flat arches that rise up to 15 metres high. To the south is a building that houses the libraries, administrative offices and conference centre and is positioned next to the southern semi-enclosed sahan. The minaret is positioned at the north-western corner of the complex and rises to 70 metres.

As can be seen from the mosque spatial program, the mosque is designed with a sequence of open spaces, leading to semi-open and then enclosed spaces, and the hierarchal sequence of the spaces is organised based on a vertical axis that is built up in accordance with the mihrab axis, which Kanan (1990, p. 63) described as:

> The over effect in massing and silhouette terms is indeed very traditional. Entry to the prayer hall is staged along the mihrab's axis [..] so far all we have is architecture as pure ceremony, as continuous celebratory history. No ambiguity. No novelty. No acknowledgment of modernity.

Furthermore, Makiya's vision for the interior of the mosque and the landscaping was not supported by the client. Makiya's original renderings showed more of an understated interior and a landscape including a central fountain in the upfront main Sahan. Both elements reflect his philosophy of promoting a built environment conducive to worship (contemplation) and integrating both the sacred and the social elements (Figure 8.27).
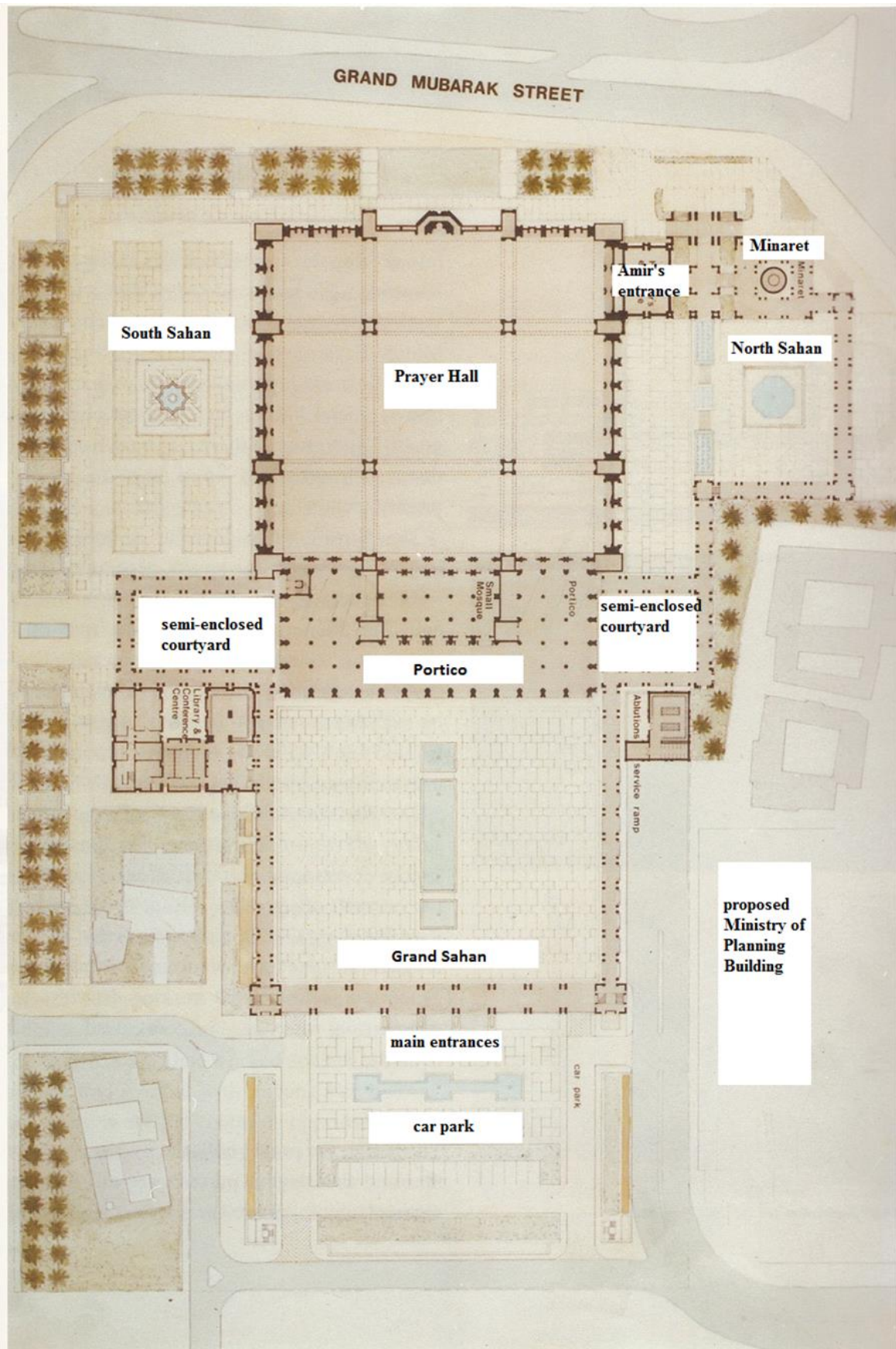
Figure 8.26: Plan of KSM. Source: (Kanan, 1990, p. 62), (text added by the author).
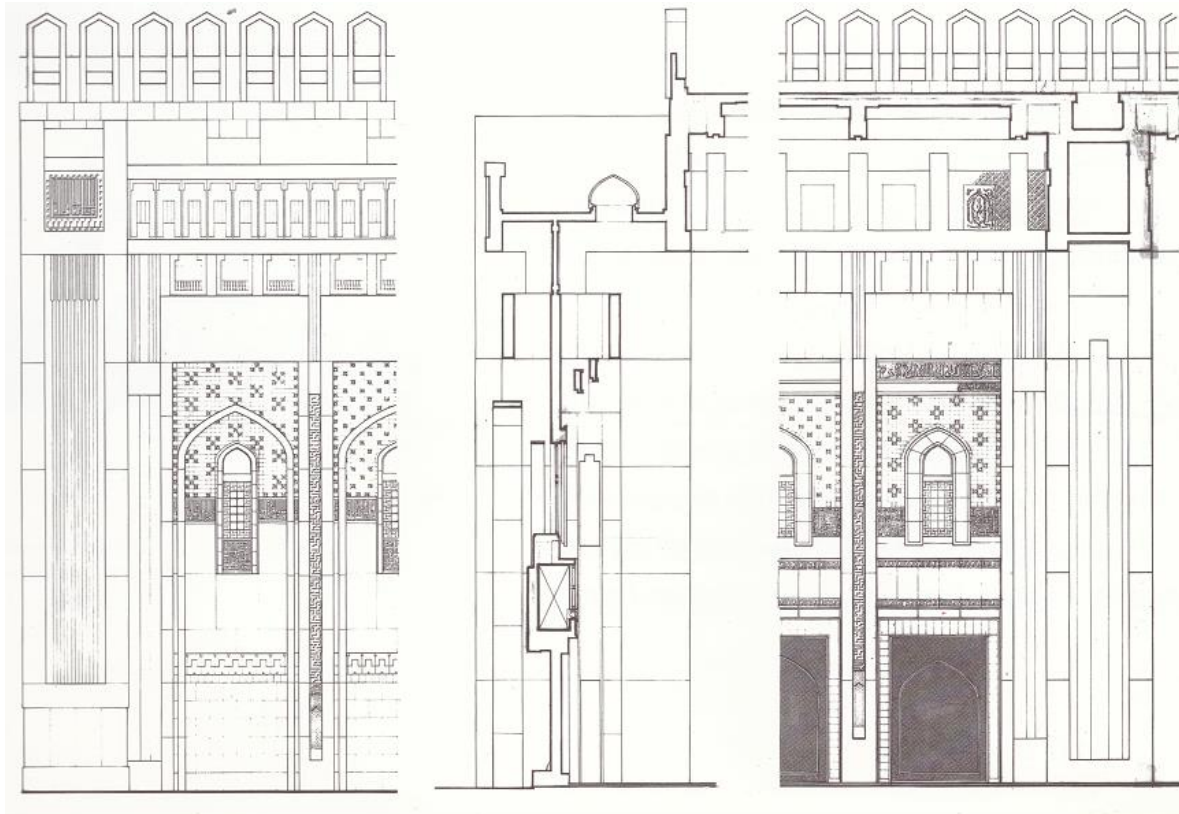
Figure 8.27: From left: exterior elevation of the wall bay unit, section of the wall bay unit and section-elevation of the interior wall bay units and decorations. Source: (Kanan, 1990, p. 67).

It appears that the client was not satisfied with the final result or had a change of direction and recruited Moroccan craftsmen for the plaster and tile work decoration of the interior design. In addition, specialists from Egypt, Pakistan and India were invited to design and execute the work of stone, wood carving and calligraphy design. 'In the final construction stage, the client requested the even more ornamentation be added to the interior surfaces of the mosque and to the Amir's reception area' (Holod and Khan, p. 83). It was all done without the supervision of the architect, 'who subsequently considered the colours and decoration excessive and unsympathetic to their context' (ibid).

Kanan (2016) commented on this event during the interview:

> The consultants; Makiya's associate, did very elaborate interior design, and the landscape design was less developed than the interior design. In both of these cases, the client took over the building a bit too early in my opinion, before that work was done and hand it over to sub-contractors. Personally, I think this was a big mistake, there was a connectedness, a weave between interior and exterior, which was lost; when you bring outsiders and they were not really designers but they were excellent Moroccan craftsmen. They did not understand the spirit that applied. They went overboard, slabbing decoration over everything. If you look at the early drawings, and some of the perspective drawings, you see the interior decoration is understated, not overstated. (Figure 8.28).

The landscape designs were done after a period of time after construction of the mosque was completed. Instead of the fountains that were originally going to be positioned in the middle of the main sahan, the client decided to maintain a plain space paved with Kota stone imported from India, resulting in an open, dull, large space. However, in recent years, because high demand has exceeded capacity, during Ramadan season, 'Eid and other holy occasions, a barrier is installed in the sahan, where it runs vertically from the main entrances to the entrance portico, dividing the sahan into two separate areas for men and women, in order to provide more space for worshippers to use (Figure 8.29). Moreover, some water fixtures, such as the cascade, were installed in the sides sahan, along with fountains as was part of the original design.

Kanan (2016) addressed the alternations made on the original design of the mosque, stating that 'there are no modifications made on the main structure. However, we were released from the site after the building was finished but before the decoration was put in, and we had no control over the decoration as consultants.'
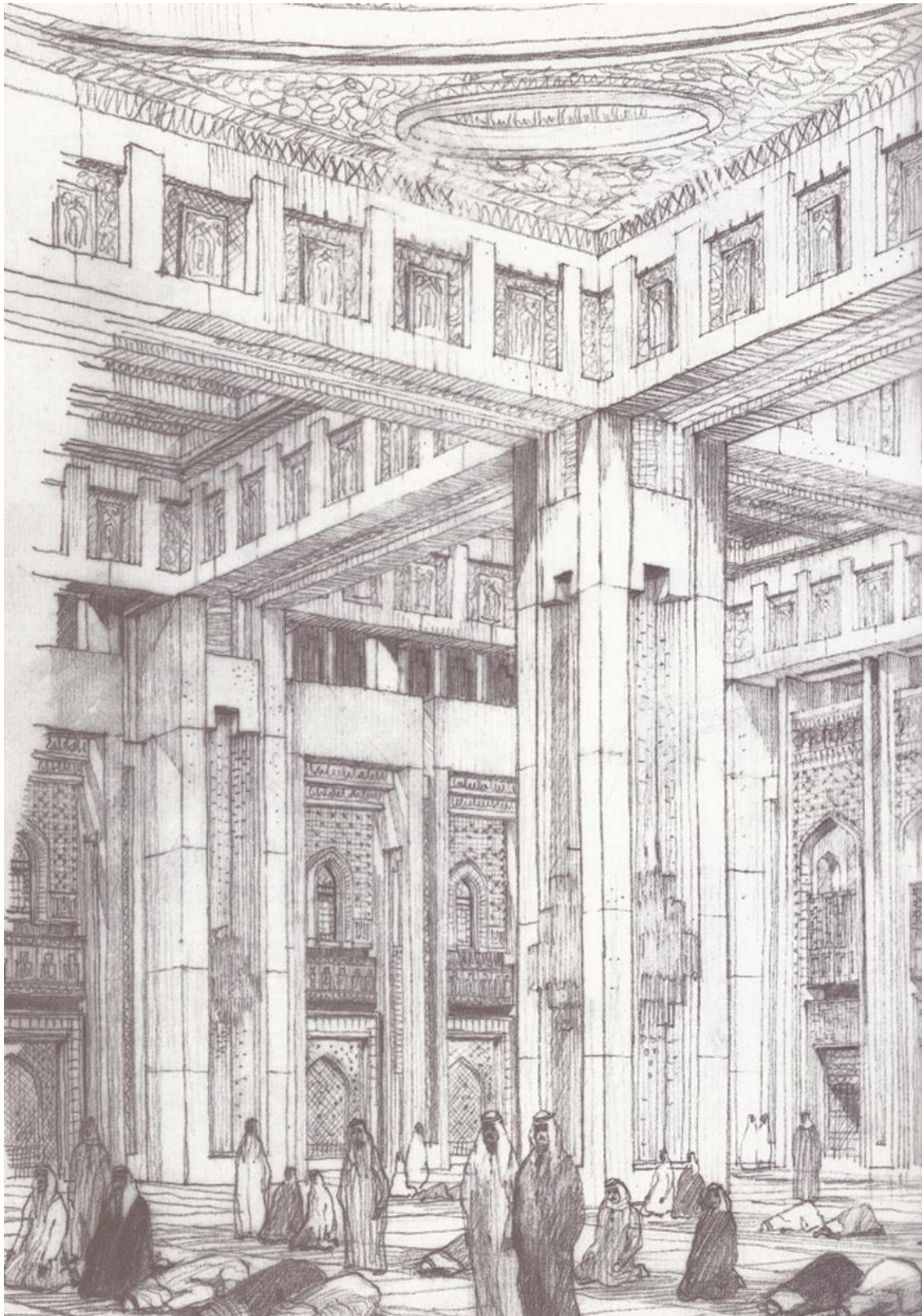
Figure 8.28: Prospective drawing of the mosque interior as it was originally intended by the architect. Source: (Kanan, 1990, p. 82).

Figure 8.29: Main sahan during Ramadan prayers. Source: (Photo commissioned by the author).

8.5.1 Spatial organisation of the mosque: Critical analysis

As mentioned above, the size of the grand sahan and the main prayer hall are the same, 5,000 square metres. This spatial arrangement might have affected the capacity of worshippers, who would find it less appealing to be drawn into the main open sahan, taking the environmental conditions into consideration, which could lead to less use of the main sahan (Figure 8.30).

In the interview, Kanan (2016) responded to this design approach of his father:

> It was intentional. Sahan was important to my father, one can pray in the sahan as one can pray inside the mosque, but also one is allowed to socialise in the sahan; go for a picnic, play with children. He loved that part of the sahan role; you are inside this protected space where you could pray, contemplate

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and also socialise. Although, I don't think it ended that way in the final design, for various reasons,

largely to do with the landscaping, and I think that is what he wanted the Sahan to become.

Figure 8. 30: View of the sahan and columned portico. Source: (Photo commissioned by the

author).

Although the sahan can be used for social activities, it is not clear why Makiya sought

symmetry in space with the prayer hall and sahan, whereas the sahan is defined by three riwaqs

that is semi-enclosed and runs for 400 meters in total, also, given that the frontal car park area

and entrance to the underground car park are all located on the opposite side of the main

building, the mosque's visitors must walk a long distance from the car park area to approach

the entrance portico or the prayer hall in the harsh sun and heat. Kanan (1990, p. 63) has

discussed this spatial arrangement by commenting that, 'in fact, hardly anyone enters along the

ceremonial route because there is always too much sun. The riwaqs ought to have provided

more shade. But they became symbols in place of the real thing. Ponderous and heavy, they represent concrete at its worst'.

Initially, the original plan called for a multi-story building reserved for a car park within the site of the mosque, but Makiya fought against this idea and convinced the client to position a five-level car park underground, beneath the main sahan, which can hold up to 550 cars. According to Kanan (2016), who argued during the interview that 'My father was right to choose the multi-story car park to put it underground not to let it rise as mass and compete with the volume of the KSM. I think that was a correct decision.' However, the outcome was not environmentally efficient, for the reason discussed above. Kanan (1990, p. 63) went further to defend his father's choice of this strategy by claiming that 'Kuwaitis are accustomed to jumping out of air-conditioned cars straight into air-conditioned prayer halls. Only the driver who parks under the sahan is likely to make the required pilgrimage.'

His statement is not accurate in many ways. First, his assumption implies that all the mosque's visitors own air-conditioned cars, which represents an extreme point of view. In essence, the mosque should be a place that serves all levels of social fabric with its different range of wealth and class, no one is expected to own a car to drive to the mosque and be dropped off at its entrances. It is a place that is open to all people regardless of their ethnicity and income. Second, KSM was not built to serve only Kuwaitis, in fact, Kuwait demographics shows that, 'At the time of its first census in 1957, Kuwaitis constituted 55 percent of the population in Kuwait. This percentage declined to 42 in 1980 and has further declined to about 40 percent in 1985' (Shah, 1986, p. 815). Expatriates and the workforce of Arabs and Asians constitute a significant part of the Kuwait social fabric, with the majority as Muslims.

An alternative design would have been to allocate a car park area at the south sahan, which will be a more dynamic solution as it is closer to the side sahan that leads to the entrance portico

where the daily prayers are held. Moreover, doors can be placed on the south wall of the main prayer hall, where it directly connects the visitors to the interior of the main building. The recent changes to the mosque confirm the capability of this proposed spatial re-arrangement; the changes have shown that an additional car park area was provided at the south of the mosque, with access to the south sahan, where tents were erected to be used for social activities, but also provided a suitable link to the mosque entrance portico and its side sahans (Figure 8.31).

Figure 8.31: South view of the mosque, showing the additional car park space and tents at the back. Source: (ibid).

Even though the main structure was built as it was intended by Makiya, the modifications to the mosque's interior and exterior spaces forced the mosque to have an interruption in its formal language. The wall bay units are the main theme of the design that is constructed on the façade

of the mosque and mirrored with interior walls as well, but the extensive decorations and gypsum works have created a different rhythm that intervened with the spirit of the mosque's architecture (Figure 8.32a, 8.32b).
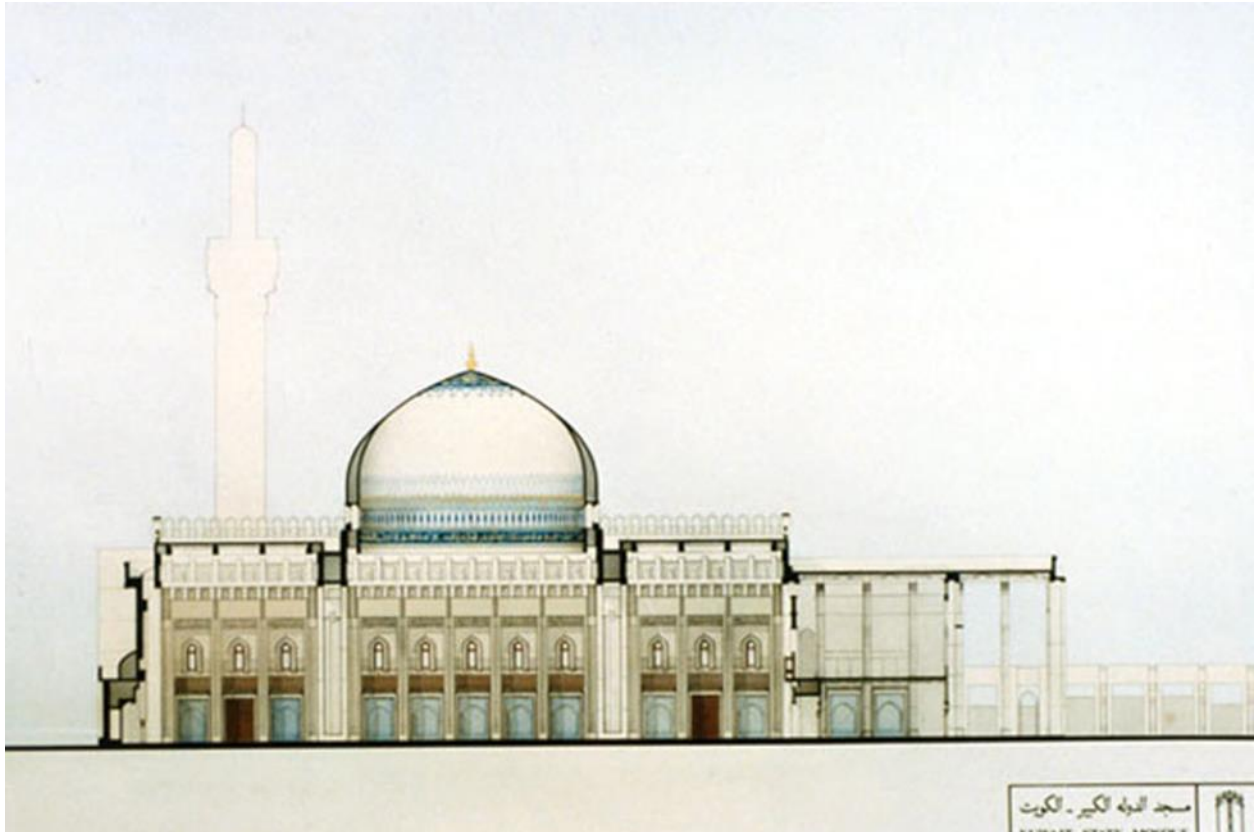
Figure 8.32a: Cross-section of the mosque, showing the interior wall bay units. Source: (Aga Khan Award for Architecture, courtesy of architect).

These circumstances have weakened the project as a whole. Kanan (2016) argued that it 'seems clear that the client felt that they wanted more elaborated interior decoration; they identified the magnificence of the mosque with plenty of intricate ceramics and decorations, which I think this is not accurate way to think about in this type of monumentality.' The disagreements between the architect and client went further with the architect's choices of concrete colours for the exterior walls and parapets; should it be left grey or white creamy colour? In his defence, the architect was making some changes to lower the total cost of the mosque. Makiya had

originally selected grey concrete for the exterior walls and a white creamy colour for the parapet.

Kanan (2016) best captured this misalignment of vision between the architect and the client in the following statement during our interview:

> The decoration is meant to highlight, to state, to understand, to play with the meaning of the elements of the architecture, and I think that was lost in the way it was done. It's one of the big disappointments of that building in my opinion.
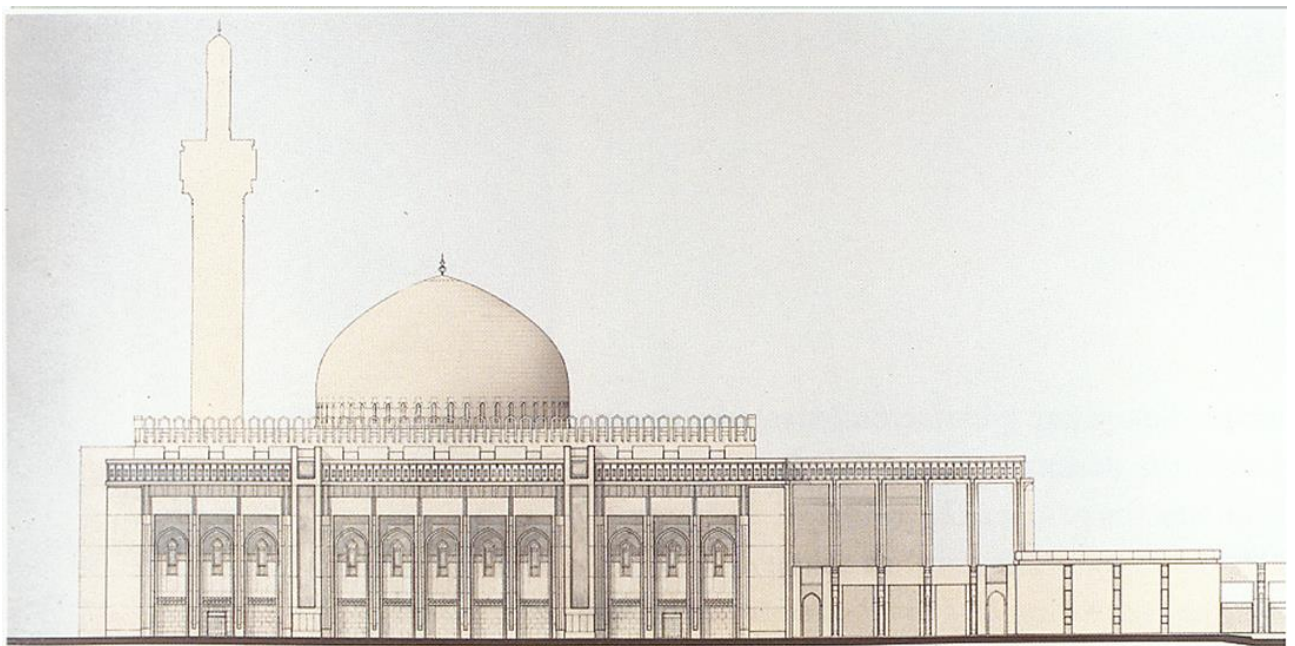
Figure 8.32b: South elevation of the mosque. Source: (Kanan, 1990, p. 67).

8.5.2 The decorative work in the KSM's interiors

The main prayer hall, mihrab, dome, lightings and minaret will be discussed respectively, to provide a closer look at its spatial settings and decoration. The discussion will be applied to the mosque's condition prior to the recent restoration in 2013. In a documentary on the KSM (broadcast on October 25th, 2014), Ibrahim Ashkanani, the director engineer of the KSM restoration work commissioned by the royal court of Kuwait, has stated that:

From the first construction of the mosque in 1986, till 2012, the mosque had never been fundamentally

restored, the mosque original architecture was intact since it was first opened, then it was closed for

restoration and maintenance work from March 2013 and reopened in July, in the same year, to be

available to be used for the last ten days of Ramadan.

Recent restorations that took place in 2013 show dramatic changes to the ceiling and the internal of the central dome. It indicates also that these latest restorations did not respect Makiya's original intentions for the interior design and settings. However, the discussion will be applied to the mosque's architectural design, prior to the 2013 restorations.

The main prayer hall can be accessed from the portico through a partition of coloured glass blocks (Figure 8.33), which allows the natural light into the interiors. There are five main wooden doors that open to the main prayer hall, which are framed by Persian pointed arches.

Figure 8.33: Interior of the prayer hall. Source: (Aga Khan Award for Architecture, Courtesy of architect).

The elevations of the prayer hall are designed based on the concept of the wall bay units; the lower part of the prayer hall walls is articulated by concave arches that are covered in marbles, and designed by bands of Qur'anic and prayers (Dua'a) verses, in addition to square Kufic (also known as geometric Kufic) and Thuluth Arabic scripts of calligraphy (Figures 8.34a, 8.34b). The surface of the mihrab-shaped arches is adorned with blue ceramic tiles and Moroccan stucco. According to Ashkanani (2014), all the calligraphy scripts are made by the Kuwaiti master calligrapher Mohamed Al Haddad.

The lighting of the main prayer hall is enhanced by 80 chandeliers attached to the walls, ceiling and columns, and are imported from Germany.

Figure 8.34a: Examples of Kufic and Thuluth Arabic scripts of calligraphy in KSM. Source: (photo commissioned by the author).
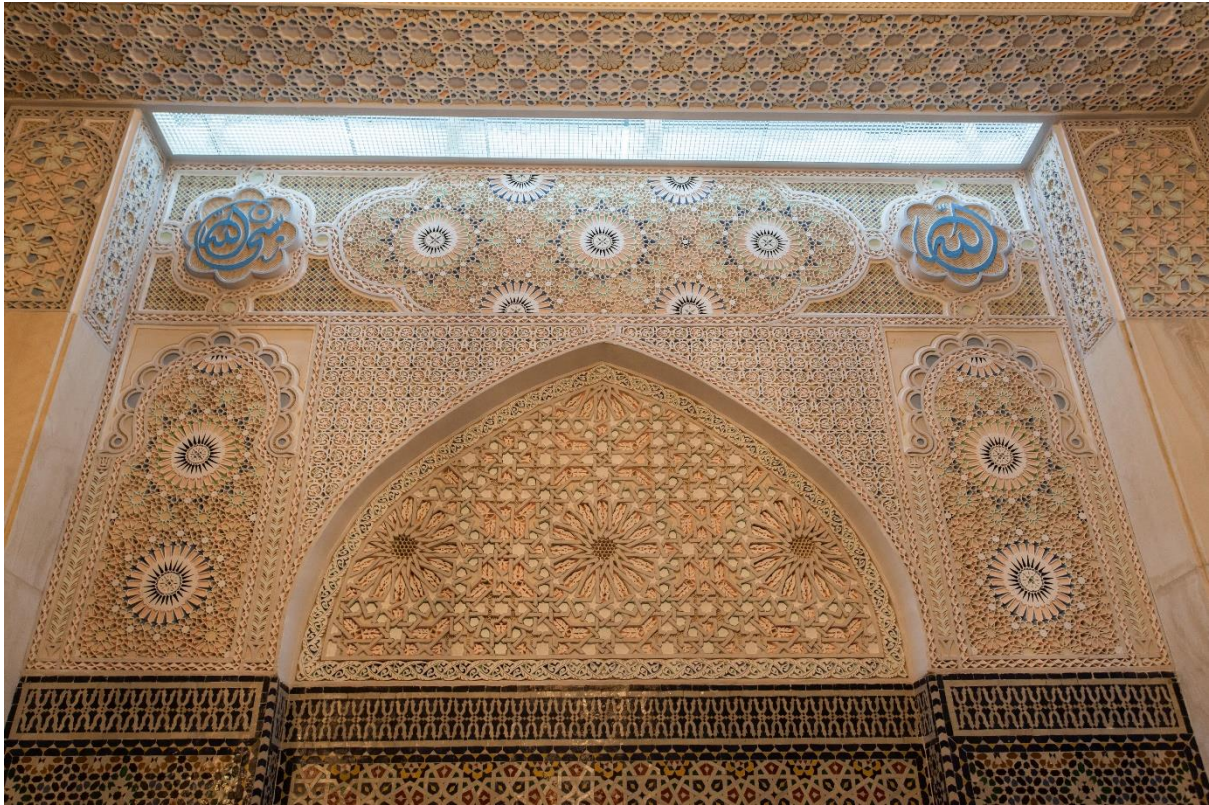
Figure 8.34b: Decorations of the mihrab-arch units in the Amir's reception room. Source: (photo commissioned by the author).

Mihrab is centered at the Qibla wall, between six mihrab-shaped units; here, the mihrab is not only emphasised by being projected from the Qibla wall, but also by being positioned between blank walls flanking it on the sides and separating it from the six bay units built in the same wall. The interior walls of the mihrab are covered by craved tilework of blue, green and yellow colours of stucco and garish, concaved by half circular shape and framed by a Persian pointed arch. As discussed earlier, it is an arrangement that echoes the Khulafa mosque but differs from it by the interruption made by the mihrab as projected elements from the wall (Figure 8.35).
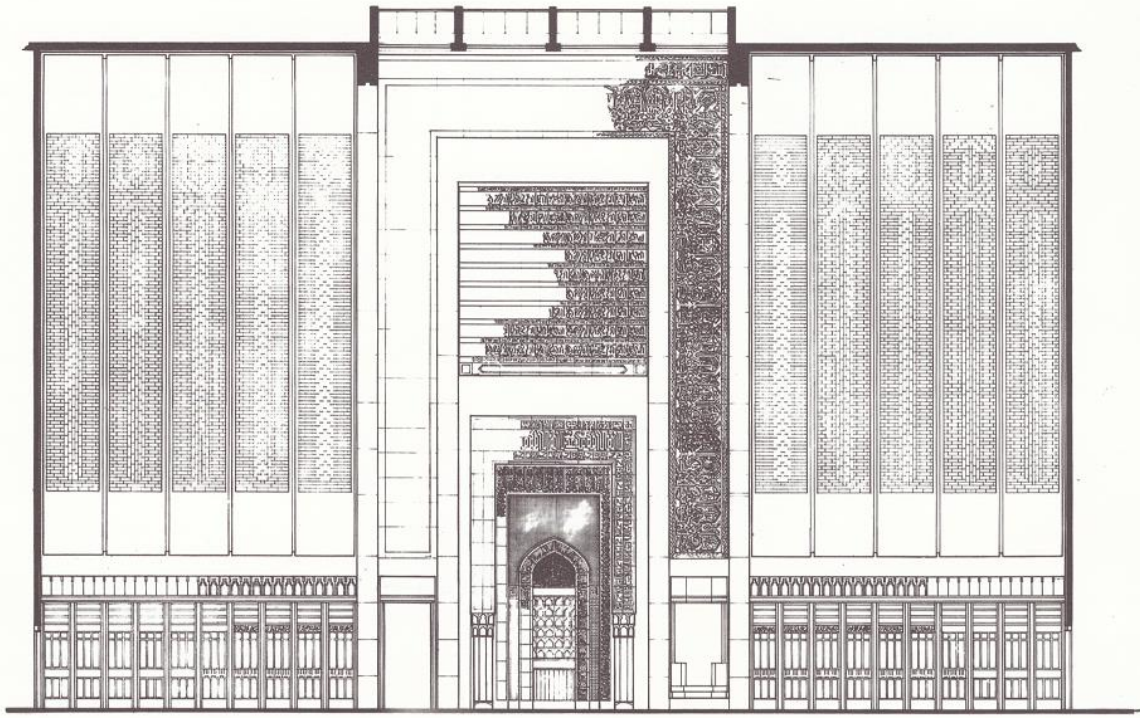
Figure 8.35: Original drawing of the mihrab at the Qibla wall. Source: (Kanan, 1990, p. 64).

The exterior of the mihrab is expressed by rectangular space supported by two columns, each column's capital comprises three sets of muqarnas, which are designed by forms inspired from Andalusian and Moroccan style. The lower part of the mihrab is designed by different colours of Moroccan *Zellige* (terra cotta tilework covered with enamel in the form of chips set into plaster). The minbar, which rises to a 2-meter height is set right to the mihrab and made of Saj wood (Figure 8.36).

Figure 8.36: The mihrab design and Qibla wall decorations work. Source: (Aga Khan Award for Architecture, Courtesy of architect).

The main dome rests upon four piers. From the interior of the dome, there are 144 lancet-arched windows circling the base of the dome for lighting, and there are four shallow smaller domes surrounding the main dome. Each dome has a crystal chandelier suspended from its interior caved space, with dimensions of 7.5 meter in height and 3.5 meter in width. All are

imported from Italy and made of gold painted brass, which holds more than 100 lighting lamps, and weighs 1000 kilo grams (Figure 8.37a, 8.37b).

Figure 8.37a: View of the dome interior and ceiling design. Source: (Photo commissioned by the author).

Women gallery is on the first floor and can be accessed by elevators. There are four bays in the prayer room, defined by three sets of columns. The Qibla wall of the women gallery consists of eleven wooden Mashrabiya that are projected into the main prayer hall, on the first-floor level. There are 18 chandeliers and the walls are made of blind arches covered by Isfahan coloured ceramic (Figure 8.38).

Figure 8.37b: View of the dome at the Amir's reception entrance. Source: (ibid).

The minaret has a balcony of regular dodecagon form (12-sided polygon), covered by stone imported from Tartus city in Syria, and built in the northwest of the mosque with its own sahan. In order to reach the top of the minaret; there is an elevator instead of stairs (Figure 8.39).

The interior decoration seems excessive and overstated, resulting in an interruption in the language of architecture that Makiya aimed to represent in the mosque. However, his classical modernist formal language remains within the limits of 'wall bay unit' as the prime theme of the project.

Figure 8. 38: View of the wooden balconies of the women gallery from inside the main prayer

hall. Source: (Aga Khan Award for Architecture, Courtesy of architect).

Figure 8.39: View of the minaret. Source: (photo commissioned by the author).

He developed this theme in his later projects, and his language became more formative as seen in the sultan Qaboos mosque of Oman. In the Oman mosque, the wall bay unit is present but the architect has developed it further; the wall become as volume, as three-dimensional space. Kanan (2016) argued that his father 'developed his ideas even more, to the extreme, start as wall, becomes a thick wall, then develops into a wall as volume, and then from wall as volume it becomes a space. And this arises from his sense that is the role of the wall.' To discuss Makiya's employment of much advanced design strategies mentioned above, the following part of the chapter will be dedicated to the Sultan Qaboos Grand Mosque as the second case study in this chapter (Figure 8.40).

Figure 8.40: Aerial view of Sultan Qaboos mosque. Source: (Damluji, 2007, p.27).

8.6 Sultan Qaboos Grand Mosque in Oman

When Makiya described his experience in designing the Sultan Qaboos mosque, he stated that, 'I was aiming to make the design, stemming from the Muscat environment, which is rich with

historical features as in the castles, forts and doors, in addition to the mountains and sea which shape the geographical identity of Muscat city' (Al-Hindawi, 2013, p. 313). In my interview with Godfrey Heaps (2016), he listed some of the most important sites which have been visited by the architects responsible for the design of Sultan Qaboos Mosque. He stated that:

> A great deal of local research was undertaken where we investigated both characteristic architectural form but also traditional arabesque details. The sites visited were numerous but a short list of the key influences was:
>
> • The Great Mosque at Bilad Bani Bu Ali with its multiple domes.
>
> • The Fort at Bilad Bani Bu Ali which is a wonderful example of fortified town planning.
>
> • The Great Mosque and the small mosques at Manah.
>
> • The Great Mosque at Bahla.
>
> • Various villages throughout the interior regions of Oman.

Through a brief examination of Omani mosques' traditional characteristics, and with emphasis on buildings mentioned above, the examination of their architectural characteristics, urban settings and spatial layouts, will aim to draw a picture of Omani mosque traditional architecture. It will also provide a wider understanding of how Makiya reinterpreted this indigenous architecture to express a classical-regionalist language in the design of Sultan Qaboos Grand Mosque.

8.6.1 Traditional Mosque of Oman: Historical Urban Review

The Sultanate of Oman is located in the southeast corner of the Arabian Peninsula, facing the Indian Ocean. It is bound by the United Arab Emirates in the northwest, Saudi Arabia in the west and neighbours Yemen at the southwest borders (Figure 8.41). The Sultanate is divided into nine administrative divisions: four governorates (muhafatha) and five regions (mintaqat). The regions are further divided into 61 provinces (wilayat). The four governorates are Muscat,

Musandam, Dhofar and Al-Buraymi, while the regions are Ad-Dkhiliyah, Al-Batinah, Al-Wusta, Ash-Sharqiyah and Ad-Dhahirah.

The Hajar mountain chain, which stretches from the northern Ras al-Jibal to eastern Ras Al-Hadd, provided a natural boundary between the coast line and the Ad-Dkhiliyah (interior) governorate (Wilkinson, 1977, p. 6).

The Sultanate is surrounded by three seas: The Arabian Sea in the southeast, the Gulf of Oman in the northeast and the Arabian Gulf in the north. This location has provided Oman with a strategic position that played a major role in making the coastal ports operate as regional trading centers.

'Islam is the official religion, although its society is diversified among different Islamic sects and ethnicities. Omanis practice two forms of Sunnism (Ibadhism in the interior; mainstream Sunnism on the coast)' (Common, 2008, p. 218).   The majority of Omanis follow the Ibadhi school of Islam. According to Risso (1986), 'unlike the other Gulf States, Ibadhism is the dominant sect and is a form of Islam distinct from other sects, which is only found elsewhere outside Oman in parts of North Africa'. Moreover, Sunni is the main religious sector in the southern region, Batinah, Bilad Bani Bu Ali and the area of Ibri in the north.

8.6.2 The traditional characteristics of Omani Settlements

'Settlements on the coast which existed on long distance trade and crafts had the most "international" appearance and can be compared with coastal settlements in the Gulf and along the coast of the Arabian sea and the Red Sea,' (Al-Salimi et al. ,2008, p. 41).

The authors referred similarity is in the traditional composition of urban morphology shared in an Islamic city; this is a cluster of residential buildings defined by open spaces of courtyards and alleys and the coexistence of a central market 'souq' and a Friday mosque.

Figure 8.41: The political map of Oman. Source: (http://www.mapsofworld.com).

However, geographical factors, climate conditions and regional influence have contributed to forming Oman's urban and spatial organisation. It differs from the other coastal cities in the northern Gulf, and there are also variations compared to coastal cities in the Red sea, in its architectural traditions, spatial arrangements and decorations (Figure 8.42).
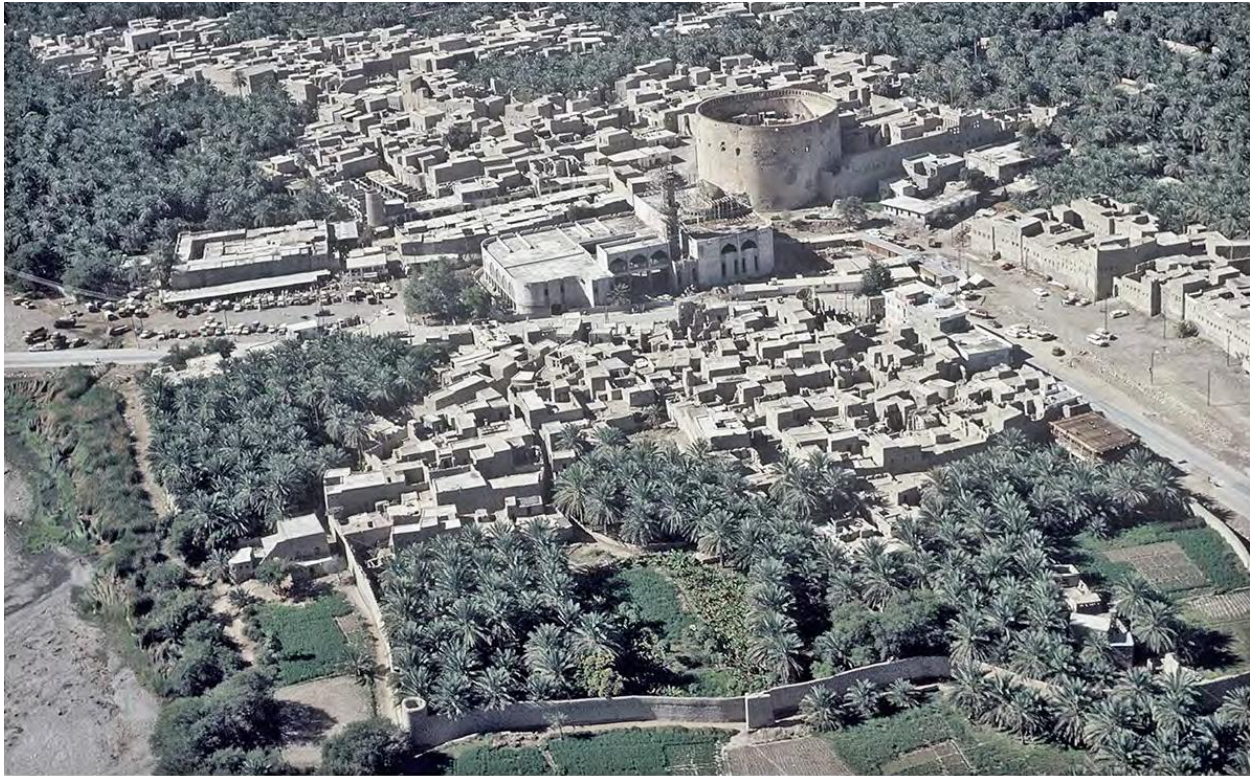
Figure 8.42: Traditional patterns of Omani settlements in Nizwa show the compact settlements of the Interior and the division into tribal quarters - Alaya in the foreground and Sufala around the circular fort. Source: (ArCHIAM Centre. Religion and Culture. Liverpool: ArCHIAM Centre, 2016).

According to Paolo M. Costa (1983), there are two types of traditional settings in Oman: the mountain and the costal settings; 'in the first kind of environment the most common pattern is the oasis settlement which occurs wherever water supply and cultivable land meet' (Costa, 1983, p. 247). Bahla is one of the examples of this type of settlement, with its 'fortified compound containing a castle and several buildings. The great mosque is adjacent to it, and at the foot of the hill is the walled suq' (Figure 8.43). The costal settings have diffuse linear settlements along the coast, as seen in Al-Batinah, while the 'interior' has tighter 'nucleated' settlements, sometimes with tribal upper and lower towns. An example is in the Nizwa quarters of Alaya and Sufala, which are separated by wadi (valley) (Figure 8.44). In addition, Costa has stated that there are two types of costal settings: '(a) more or less continuous built up areas

distributed along the shore and intimately connected with an inland strip of cultivation; (b) isolated centers clustered at the mouth of wadis'(ibid). The center traditional settings can be seen in Muscat (Figure 8.45), while the first type of costal settings of continuous built areas is evident in Suhar city and Zafar costal town (Figure 8.46) and (Figure 8.47).

The schematic plans provided to illustrate the different types of Oman traditional settlements, are all quoted from Costa's article, *Notes on Settlement Patterns in Traditional Oman* (Costa, 1983, pp 247-268) and According to him:

> In the drawings, black denotes buildings and structures of communal use (such as town walls, fortifications, Friday Mosques, *sabla* (semi-public hall), suq areas, etc.); hatching denotes residential areas; dark tone denotes palm gardens and light tone fields. Dotted lines denote the course of the main *falaj* channels (ibid, p. 250).

Whilst the mosques in Oman have common characteristics, each region's mosques still have their own unique characteristics; differences can be seen between the inner regions and coastal mosques. Furthermore, differences can be found intra-regionally. Costa (2001, p. 35) described the Ibadhi mosque as 'square or rectangular hall with the mihrab niche at the centre of one side. Opposite the main entrance. This is often preceded by a courtyard, which can be partly roofed' he also, mentioned that 'the traditional Ibadi mosque has no minaret [..] but a permanent access to the roof remained as a typical feature of the building and the domed turret which covers the wooden steps leading to the roof is the only external feature to mark its existence' (ibid).

The calls for prayers are usually preformed from the forecourt of the mosque, but there is also an opening in the roof which can be accessed by a wooden ladder and covered by bumah (owl in Arabic), or as Costa describe it as 'domed turret'.

Contrary to the costal mosques which are more elaborate in mihrab decoration and has a short and squat minaret. Costa states that the 'main difference between the Ibadi and non-Ibadi

architecture is in the stylistic inertia of the first and an extreme visibility of the latter' (ibid, p. 121). These architectural features of different religioned sectors have shaped Omani mosques with their specifications and vocabulary. This will be elaborated upon further in the following pages.

Figure 8.43: Schematic plan of Bahla. Source: (Costa, 1983. p. 257)
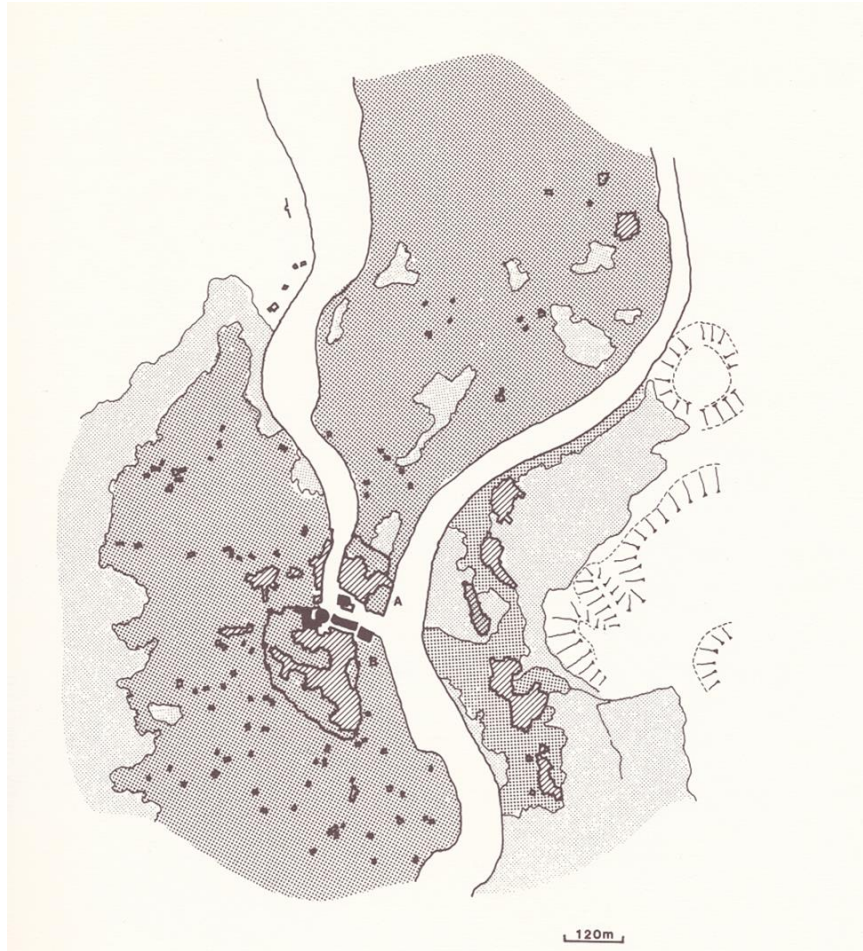
Figure 8.44: Schematic plan of Nizwa, with the wadi separating the Alaya and Sufala quarters. Source: (ibid, p.253)

One of the environmental factors is the potential availability of water in the aquifers in the mountain, where tunnelled water channels (locally known as **falaj**) link the aquifers in the mountains to the cultivable land in the plains. Melamid (1986, p.317) defined 'falaj' as, 'the termini of falaj, or qanats, the underground channels that bring water from aquifers to cultivated areas, were the prime factor in the siting of settlements in this desert region.' It can be seen that the proximity of falaj is one of the factors in choosing the location for the mosque (Figure 8.48). J. C. Wilkinson (2013, p. 97-98) described the layout of falaj as:

> At very top of falaj, where it first comes to the surface, is an opening from which drinking water may
> be drawn, the shari'a. This is the first permitted use of water, and access is free to all. From here the

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water runs in a well-constructed channel towards the village, and quite often this section is partially covered. On a large falaj the first split may occur high up this main stream (qa`ida, `amid), but in smaller one's divisions does not take place until the falaj reaches the cultivated area. The location of the residential area (bilad) itself varies, but it is quite often close to the upstream end…. Mosques too may have direct access to the falaj water supply for the purpose of ritual ablutions.

Melamid (1986, p.317) explained further that, 'old houses in a settlement are usually located just above the mouth of a falaj, where also are found souqs and communal facilities like mosques and bathhouses.' (Figure 8.49).

Figure 8.45: Schematic plan of centralised settlement settings of Muscat. Source: (ibid, p. 263)
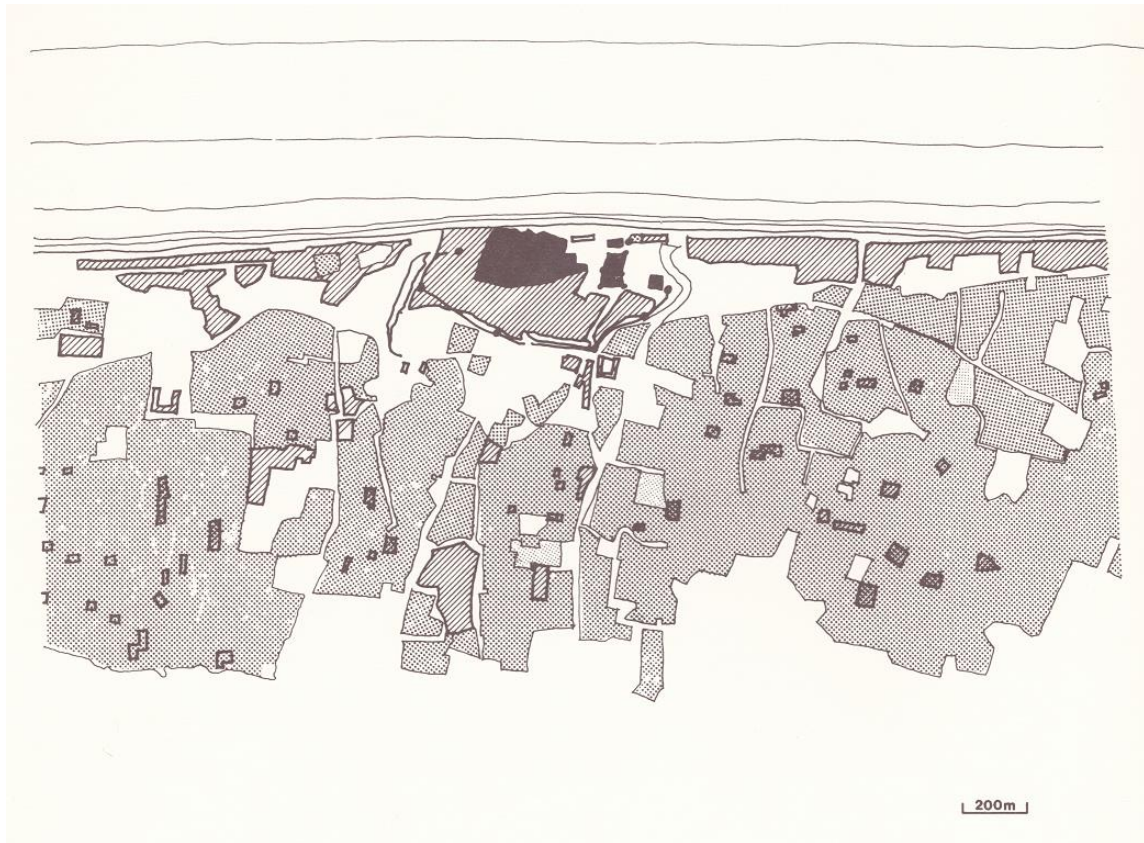
Figure 8.46: Costal settings of continuous built up are in Suhar city. Source: (ibid, p. 264).
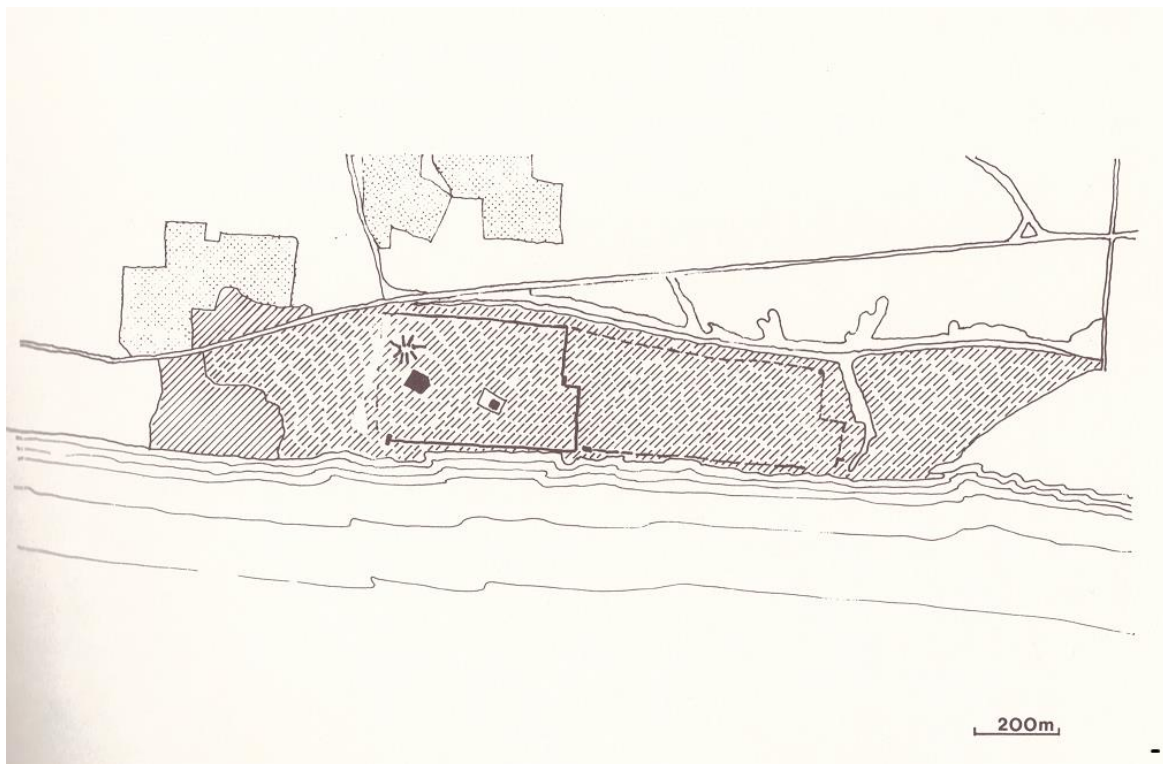
Figure 8.47: Schematic plan of Zafar costal town settings. Source: (ibid, p. 265).

Figure 8.48: Ablution area at Bahla mosque, with falaj running underground. Source: (Al-Salimi et al., 2008, p. 81).

A related factor is the construction method of **building mosques on elevated ground,** which is widely witnessed in old mosques of Oman. This might be done as a result of excavating work undertaken, to provide an increase in water flow in the falaj, 'the excavated material was used to raise the level of the surrounding land or to construct walls and towers around a settlement' Melamid (1986, p.317).

Sabla, is another spatial factor which is frequently found throughout Oman's regions. Costa (2001, p. 11) defined sabla as:

A semi-public hall built by a tribe or a clan for tribal gatherings, inter-tribal contacts or the reception of guests. The sabla perhaps the most typical of all the Omani buildings. Its architectural types may range from the very simple bare room, common in most of the villages

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of the northern interior, to a more articulated type in the Batinah coast and even more refined, multi-storeyed type to be found in the Sharqiyya.
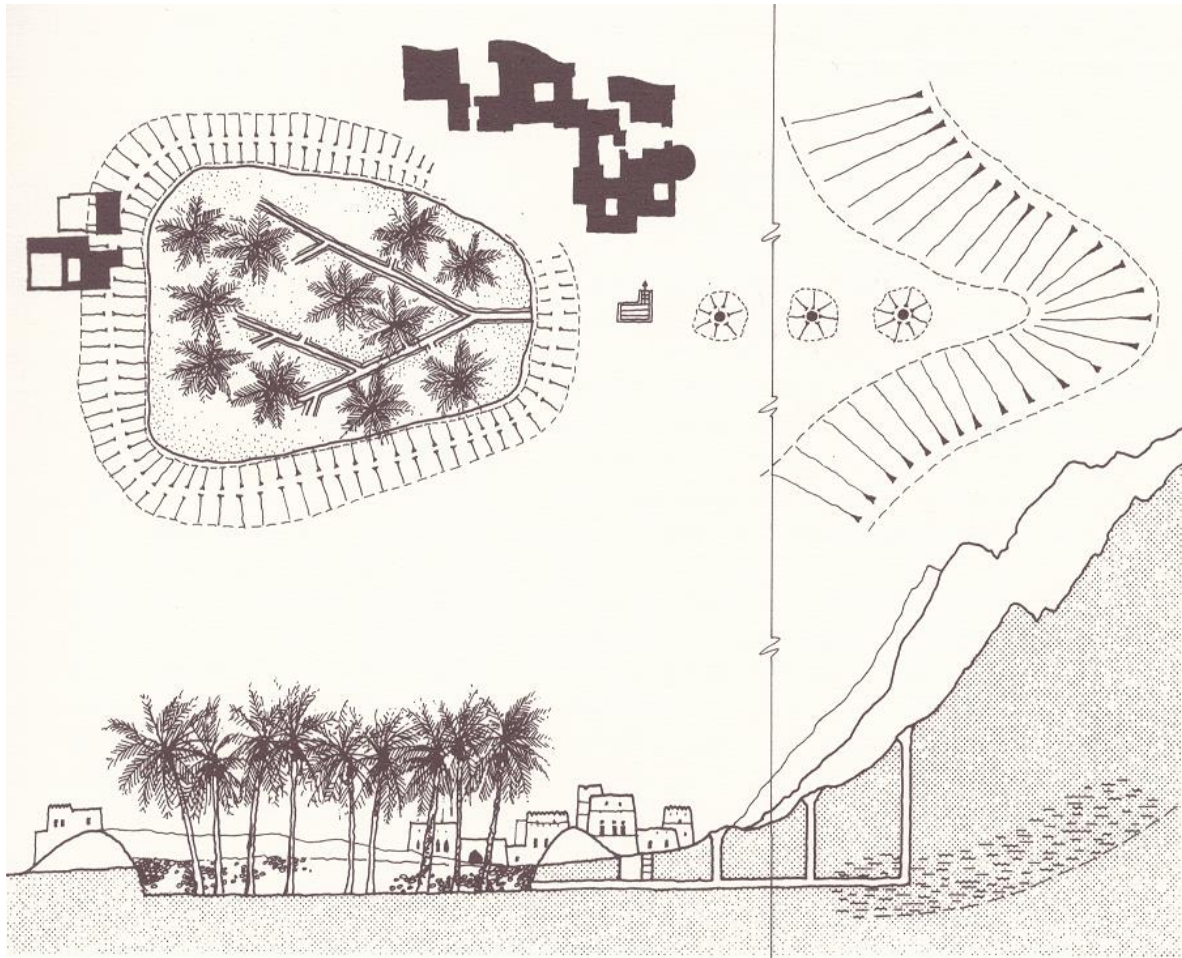
Figure 8.49: Schematic layout and section of a falaj showing the associated gardens which have been excavated down to the falaj level. Source: (Costa, 1983, p. 149).

In terms of the mosque spatial organisation, sabla is sometimes found as part of the mosque complex - perhaps related to the mosque terrace - and used as Koranic schools. Also, it is linked to gate of walled settlement usually. Stephen Kite (2002, p. 149), describes this inter-relation between the gate and sabla, as 'transitional threshold aspect of the gate and sabla is particularly evident, and especially poetic, when they are linked as in the case of Al Fiqayn, near Manah, at the entrance to the largely abandoned quarter surrounding the attenuated tower of the fort'. (Figure 8.50)
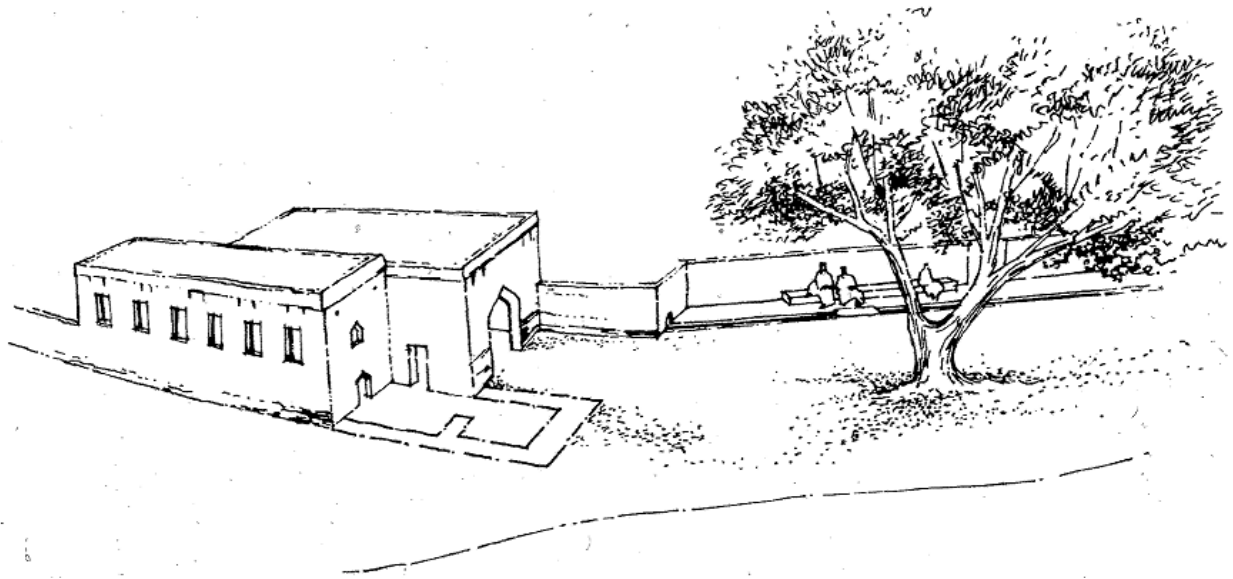
Figure 8.50: Kite's sketch drawing of the Al Fiqayn, showing: Gate, sabla, dukkha and the tree. Source: (Kite, S. Journal of Oman studies, vol. 12, 2002, p.149).

'The term *sabla* is, as far as we know, peculiar to Oman, and according to the distinguished citizens of the city is translated in the classical language by *majlis ` amm*. The *sabla* is thus a common, semi-public reception room as opposed to the *majlis khass* or private reception room of individual *bayt*' (Bonnenfant et al., 1977, p. 115). From Costa, Kite and Bonnenfant descriptions of sabal, it is clear that sabla is a spatial element that serves as social center for a community. Also, it separates the privacy of the inhabitants from the total openness of the outer spaces.

The Ibadhi mosque are generally simple, if not austere, in appearance. An example is the great mosque of Muslimat, in Oasis town near Nakhl, built adjoining the gate of the walled part of the settlement. The gatehouse-mosque composition reflects a unique character of Oman urbanism, which did not exist in other parts of the Arabian Gulf regions (Figure 8.51).

Figure 8.51: Muslimat mosque, showing the gatehouse and mosque adjoining in one architectural composition. Source: (Al-Salimi et al., 2008, p. 64).

The Muslimat mosque, built on an elevated terrace, can be accessed through the gateway by steps leading to the prayer hall. An ablution room is placed at the corner of the terrace, near the gatehouse. There are two doors to the prayer hall positioned off the center, with equal distance; a small niche is placed between the two doors, which serves as an external mihrab. The off center axis is usually associated with the Ibadhi mosque design, due to the Ibadism's traditions of avoiding what could be considered iconographic in architecture or decorations, whereas 'it seems the central axis from the mihrab through the prayer hall to the façade of the mosque has apparently been avoided in some cases' (Al-Salimi et al., 2008, p. 64).

The prayer hall is rectangular in shape and consists of two bays, separated by an arcade of four arches, which are supported by three columns; the central column is placed in the middle of the prayer hall. Spatial arrangements reflect the tendency to avoid the central axis running from the mihrab at the Qibla wall to the opposite wall of the prayer hall.

Bumah is built on the south-eastern corner of the flat roof, which covers an opening below it. There are diagonal wooden beams that serve as a ladder to the bumah. (Figure 8.52) Muslimat

mosque is a model example of the Ibadhi mosque architecture, with its simplicity and plainness of the walls. The mihrab which is decorated with geometric patterns and the rectangular craved plaster panels found in the wall, is an exception. (Figure 8.53)

Figure 8.52: Bumah at the corner of the flat roof of Muslimat mosque. Source: (ArCHIAM Centre. Religion and Culture. Liverpool: ArCHIAM Centre, 2016).

Figure 8.53: View of the mihrab of the Muslimat mosque, showing the decorative gypsum work and the central column in the prayer hall. Source: (Al-Salimi et al., 2008, p. 65).

8.6.3 The Great Mosque at Bilad Bani Bu Ali

This mosque is located in Ash-Sharqiyah, in the north-eastern coastal region of Oman. The mosque was built approximately 500 years ago with renovations made in 1992, and with another renovation completed more recently. It was built to serve a non-Ibadhi community, and differs from the typical mosque of Oman's interior region in its architectural design (Figure 8.54a and 8.54b).

The most eminent architectural feature is the multiple pyramidal domes. These fifty-one small domes were constructed in a repetitive fashion, forming the roof. The prayer hall is composed of five aisles, 'the first aisle from the Qibla wall, in front of the mihrab-minbar unit is barrel-vaulted for breadth of four bays. The rest of the building is covered by small domes, resting on arches supported by separated by octagonal columns' (Costa, 2001, p. 187). The prayer hall's

arcades run in two ways: parallel and perpendicular to the Qibla wall. This arrangement of the prayer hall is also a distinctive spatial element of the mosque, whereby 'the impression of the interior is not dominated by the domes (which can only be seen from below within each bay), but by the aisles extending to all sides,' (Al-Salimi et al., 2008, p. 83).

The mosque is constructed on elevated ground which is typical of the mosques in the area. It is also notable by the presence of palm trees around it, a feature shared by all old mosques in Oman. The palm trees provide a natural solution against the harsh heat and sunlight. In addition, there is a small minaret covered by a dome at the north-eastern corner of the mosque (Figure 8.55).

SCALE METERS

(a)
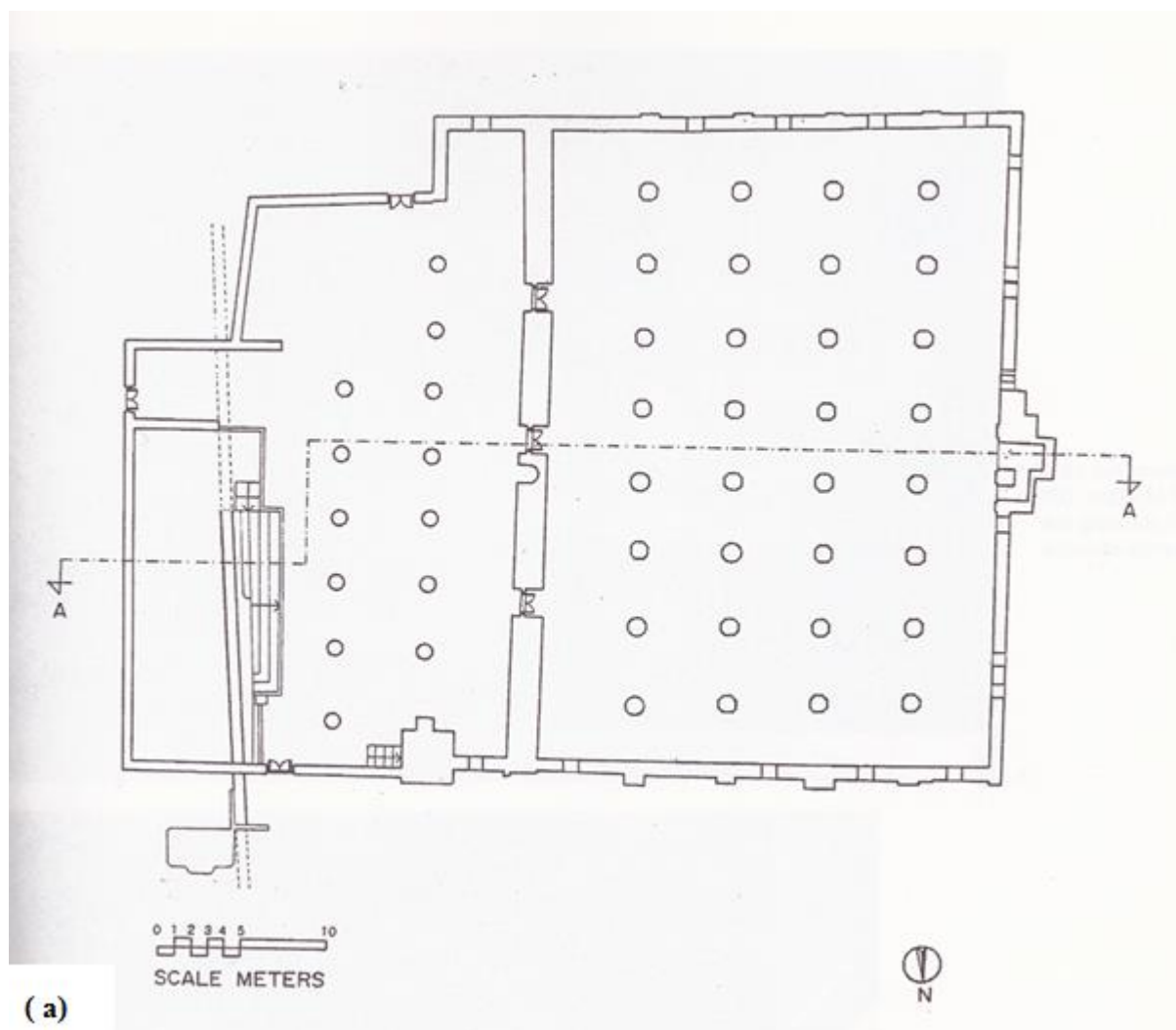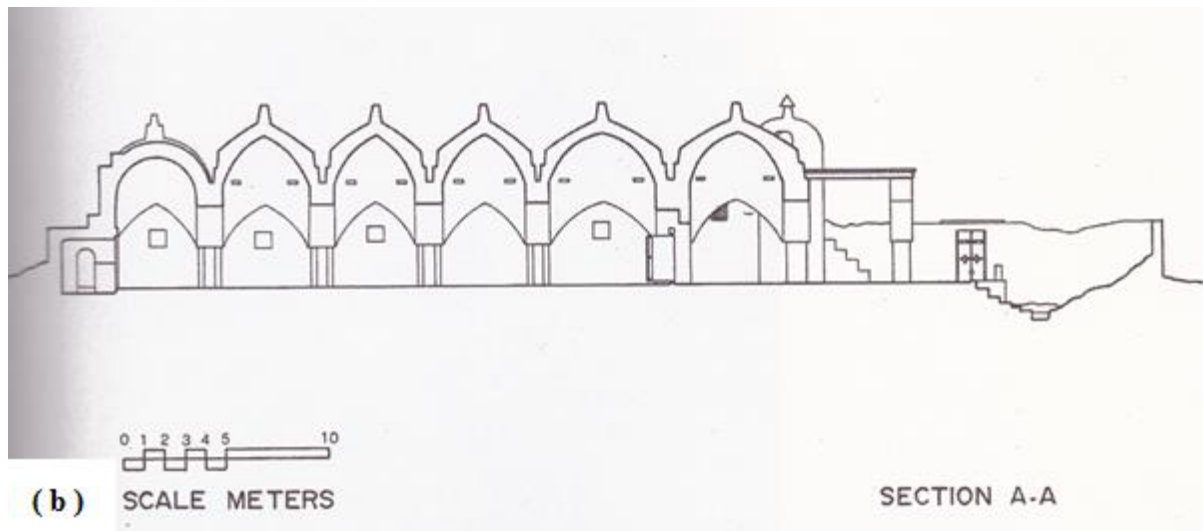
Figure 8. 54: a) Plan of The Great Mosque at Bilad Bani Bu Ali, b) section of the mosque.
Source: (Costa, 2001, p. 189).

Figure 8.55: The Great Mosque at Bilad Bani Bu Ali. Source: (www. Archnet.org.), (courtesy
of Salma Samar Damluji, 1999).

8.6.4 The Fort at Bilad Bani Bu Ali

Oman has a great number of fortifications, built to protect the country from attacks and raids: 'From the Iron Age onwards, fortifications have played an important part in shaping the settlements of Oman' (Al-Salimi et al., 2008, p. 118). For example, the forts of Tiwi and Ibra in the north-eastern region of Oman. There are different types of fortifications which vary in scale and the number of towers; the towers are also different in regard to form and height (Figure 8.56).

Figure 8.56: Fort of Bilad Bani Bu Ali, with different forms of towers. Source: (Al-Salimi et al., 2008, p. 127).

The fort at Bilad Bani Bu Ali is an elaborate example of military Omani architecture, with its long curtain walls and towers which also include houses and a mosque. The mosque is a smaller version of the great mosque of Bilad Bani Bu Ali, and shares similarity in the design of the domes (Figure 8.57). It is also evoking the design of Al Badiyah mosque in Fujairah- discussed

in chapter four. The tower's platforms are protected by crenellated parapets. On another note, the lancet and rounded arches can be seen in the interior walls of the complex fortification.

Figure 8.57: Mosque at Bilad Bani Bu Ali fort. Source: (Costa, 2001, p. 195).

8.6.5 The Great Mosque at Manah

The Great mosque of Manah, is located in Manah governorate, in the Ad-Dkhiliyah region. It is dated to the twelfth century and was restored in 1990s. 'The mosque at Manah is also remarkable for its size (c. 25 m square), for the particularly large terrace on which it is placed, and for its mihrab-minbar combination, decorated with stucco' (Al-Salimi et al., 2008, p. 77). (Figure 8.58) and (Figure 8.59).

The mosque has a flat roof which is supported by four sets of arches and a small inner courtyard, which can be described as 'a light well' (Costa, 2001, p. 88). Costa described the mosque as:

> The Great Mosque of Manah is undoubltly a very impressive building: for traditional standards, its size is remarkable and, seen from outside, the plain, simple walls rise with a pronounced tapering, enhancing the mass of the building which looks much higher that its actual 7 m. above ground (ibid).

There are three mihrabs at the western side of the terrace wall, also, there is an outer decorated niche at the eastern side of the mosque. At the north-eastern side of the mosque, there are three doors leading into interior of the mosque, and there are two ablution areas: one at the south-eastern corner of the terrace and the second is positioned next to the burial grounds at the western side of the mosque. (Figure 8.60a, 8.60b).
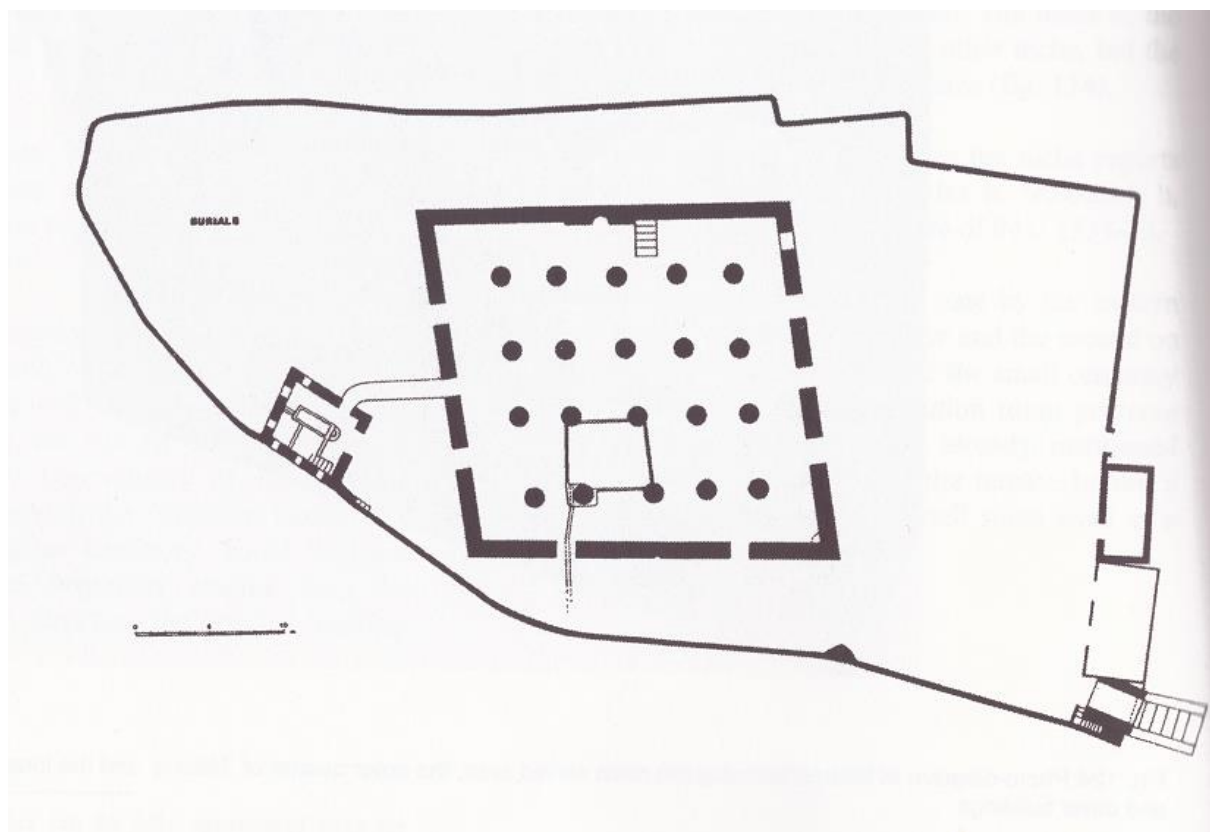
Figure 8.58: Plan of The Great mosque of Manah. Source: (Costa, 2001, p.90).
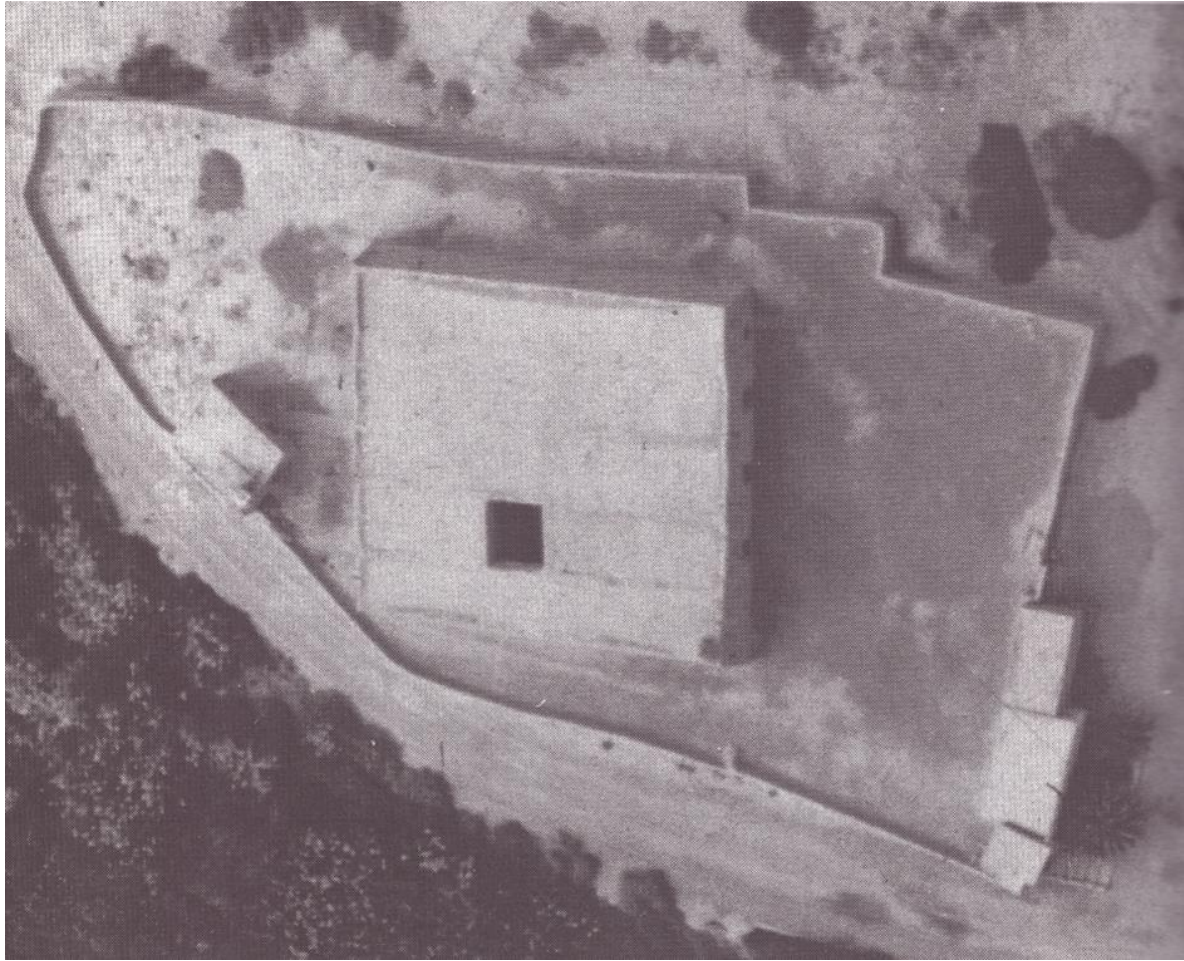
Figure 8.59: view of the Great Mosque of Manah in 1980. Source: (ibid, p. 90).

The mihrab of Manah mosque, is the prominent element in the mosque, decorated with Qur'anic inscriptions, botanical and geometric ornaments. Built of stucco and plastered with white-washed colours (Figure 8.61). Furthermore, insertion of Chinese porcelain was incorporated into the mihrab; 'a small number of these were already in circulation before the Portuguese expansion of the trade. The earliest example from the Manah (1504 CE) is identical to a sample found from the 1491 Lena Shoal Shipwreck' (ArCHIAM Centre, 2016). (Figure 8.62).
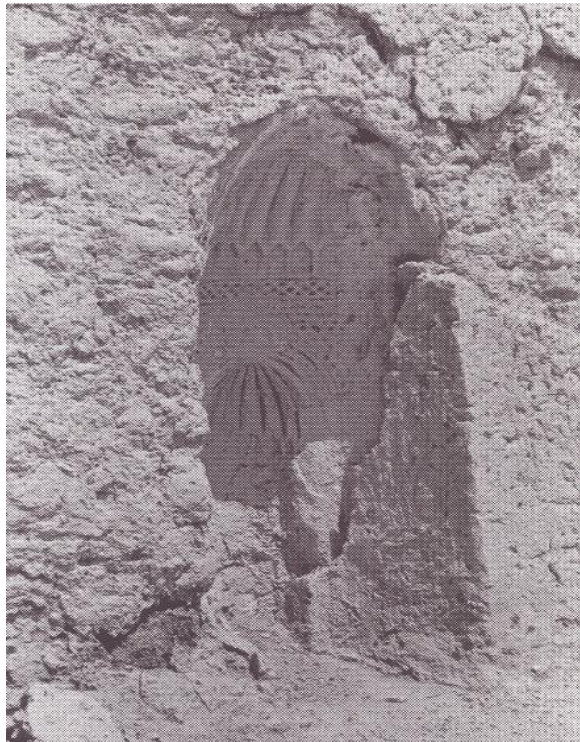
Figure 8.60: a) a view of the north-eastern corner of the mosque. b) the outer decorated niche.

Source: (ibid, p. 91-93).

Figure 8.61: Mihrab of Manah mosque. Source: (Al-Salimi et al., 2008, p. 78).
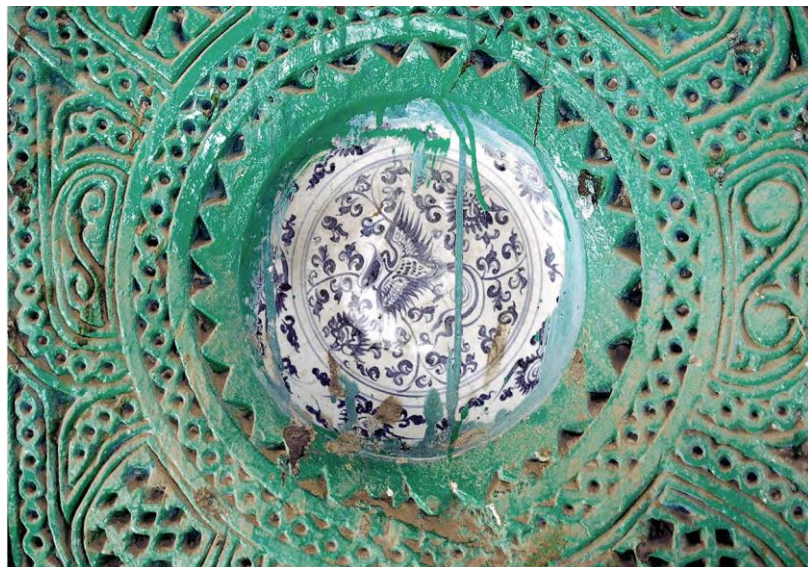
Figure 8.62: Insertion of Chinese porcelain into the mihrab in Manah mosque. Source: (ArCHIAM Centre. Mihrab. Liverpool: ArCHIAM Centre, 2016).

8.6.6 The Great Mosque at Bahla.

'Despite its present dilapidated state, the old Great Mosque of Bahla remains one of the most remarkable and impressive mosques of Oman: perhaps this is due principally to its spatial location' (Costa, 2001, p.73). The mosque is located on isolated area next to a citadel of five story building on the top of a hill. The morphology of the towers of the citadel and the residential quarters of Al-Aqr and Al-Huwayyi, in addition to the mosque have created an architectural complex of historical value (Figure 8.63). The interior of the mosque, has a combination of mihrab-minbar. The mihrab represent a remarkable artistic element, expressed by the ornaments and the use of cut stucco and decorative cast panels framing the mihrab niche (Figure 8.64).

Figure 8.63: View of Bahla with the citadel in the centre with residential quarter and the mosque in the foreground. Source: (Costa, 2001, p. 74).
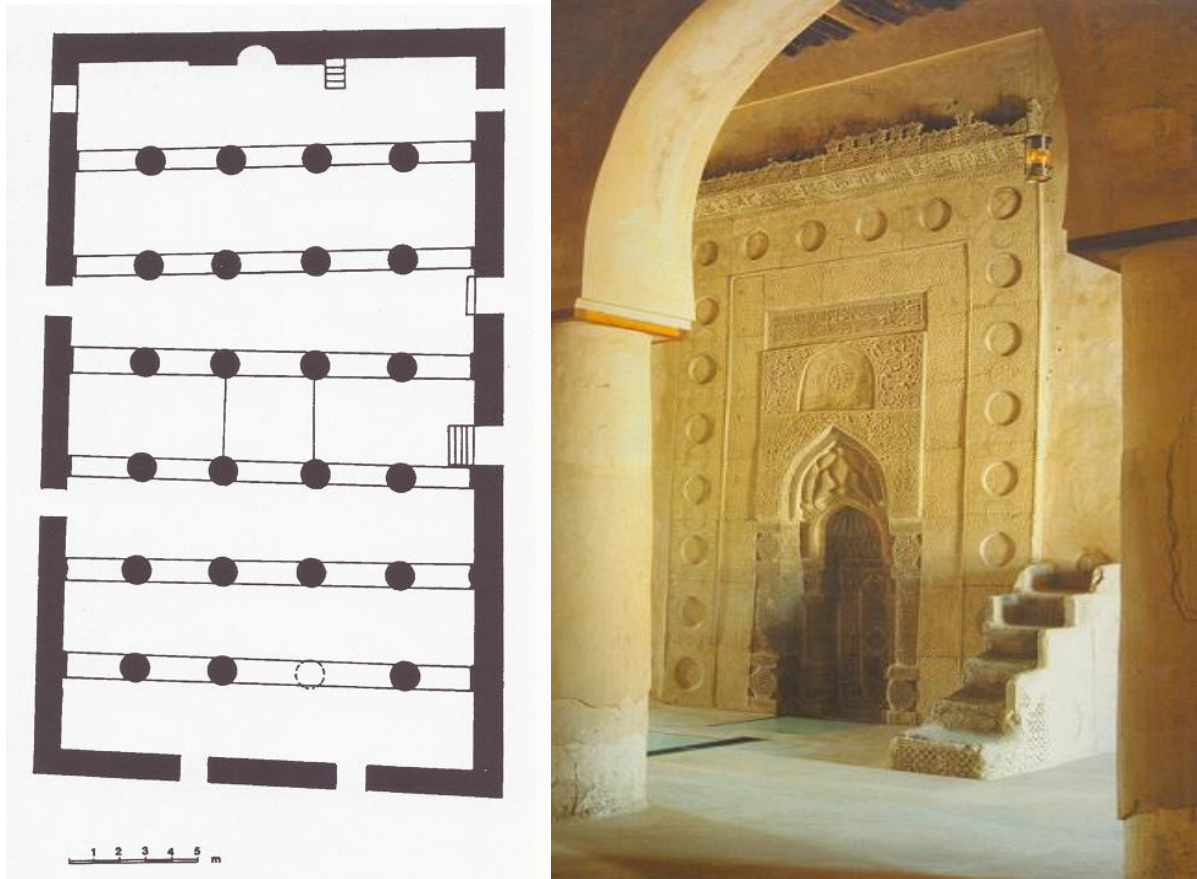
Figure 8.64: Plan of the prayer hall of the mosque. (ibid, p. 75). Mihrab-minbar unit of Bahla mosque. Source: (Al-Salimi et al., 2008, p. 75).

The prayer hall is measures with 18 by 30 meter, covered with a flat roof, supported by arches that are made of fired bricks. Costa (1997, p.33) described the spatial arrangement of the mosque as 'the rectangular plan of the mosque, its orientation on the long axis, the number and size of the columns and the height of the ceiling are all factors that conjure to create an unusual grandeur' The mosque is built on vertical axial where the mihrab is positioned on the short side of the prayer hall 'a lay-out which is certainly not common in Oman' (Costa, 2001, p. 74).

8.7 The Sultan Qaboos Grand Mosque in Muscat City of Oman: Analysis Study

The mosque was commissioned by Sultan Qaboos in 1992, with the intention of building a landmark monument in the city of Muscat, in Wilayat of Bowsher at the north-eastern of Oman. The mosque was also commissioned to host a Centre for Islamic Studies. The construction work lasted for six years; it was initially started in 1995 and completed in 2001. It is considered to be the largest mosque in Oman, accommodating 20,000 worshippers at one time, including accompanying areas of the main prayer hall, outer and internal courtyards and adjacent spaces. The mosque was built on a raised platform, evoking traditional Omani mosques design, with a total area of 40,000 square meters. with an area of land of 1,000 meters in length and 885 meters in depth, in a position parallel to Sultan Qaboos Street. The location of the mosque was selected to be in the central part of the Muscat governorate which made it accessible to the other regions of Oman by a network of roads. The mosque is surrounded by large span of empty lands, therefore highlighting the mosque aesthetics and architecture.

The plan of the mosque complex follows the rectangular form with a singular internal courtyard which is connected to the main prayer hall through an entrance courtyard. A central dome is built over the men's prayer hall, rising 50 meters above the floor, and a women's prayer hall building is located to the east which can be accessed from the eastern side of the mosque complex by an arched riwaq with five entry doors. (Figure 8.65)

In addition, there are several buildings attached to the southern riwaq to host the ablution facilities, a library, meeting hall, administrative offices and the private entrance for the Sultan of Oman.

As mentioned above, the mosque was commissioned by Sultan Qaboos and built at his own expense, he 'insisted from the outset that it was not to be a mosque of specific period or provenance- neither a Moroccan mosque, nor Persian mosque- and asked the designer to review

the beautiful cultural references of the Islamic arts and be very selective' (Damluji, 2007, p. 220). Heaps (2016), also stated in his interview that 'There was an early decision to integrate Omani pattern work throughout all building elements of the Grand Mosque' In order to comply with client request of including references of diversity of Islamic culture within the mosque architecture, in addition to represent Omani traditional architectural patterns; Makiya have integrated traditional forms from different Islamic culture in the mosque design as can be seen in the design of domes, which varies in design and construction materials through the mosque complex areas. For instance, the central dome covering the prayer hall, evoke a Mameluke design in its form, built with two-skin structural methods; latticework of concrete over a shell of golden mosaics, while the dome of the pavilion building at the east of the site, reflects an Abbasid- Persian design. Also, a reference to Omani traditional mosques, can be seen in the domes of the north and south riwaqs; they are resembling the domes of Bilad Bani Bu Ali historical mosque discussed early in the chapter. (Figure 8.66)

The mosque is composed of open public spaces, semi-public and enclosed spaces, the sequence of theses spaces are planned based on vertical axis rather than horizontal axis; a typical Makiya's approach, which he also adopted in the design of Kuwait mosque.

Furthermore, the mosque is aesthetically rich in regard to the decoration work of carved gypsum, mosaic panels, calligraphy, wooden screens design and floor patterns used in mosque interior, exterior spaces and walls, which also differ in reference to Islamic architectural cultures. According to Heaps (2016), 'Many key components such as the design of the gateway abutments to the south courtyards, the vaulted gateways, the corner treatments of the prayer hall, the design of vault elements in the inner sahan, and the design of the main dome, are all architectural vocabulary developed with reference to traditional precedence but also as a contemporary or abstracted restatement of traditional form'
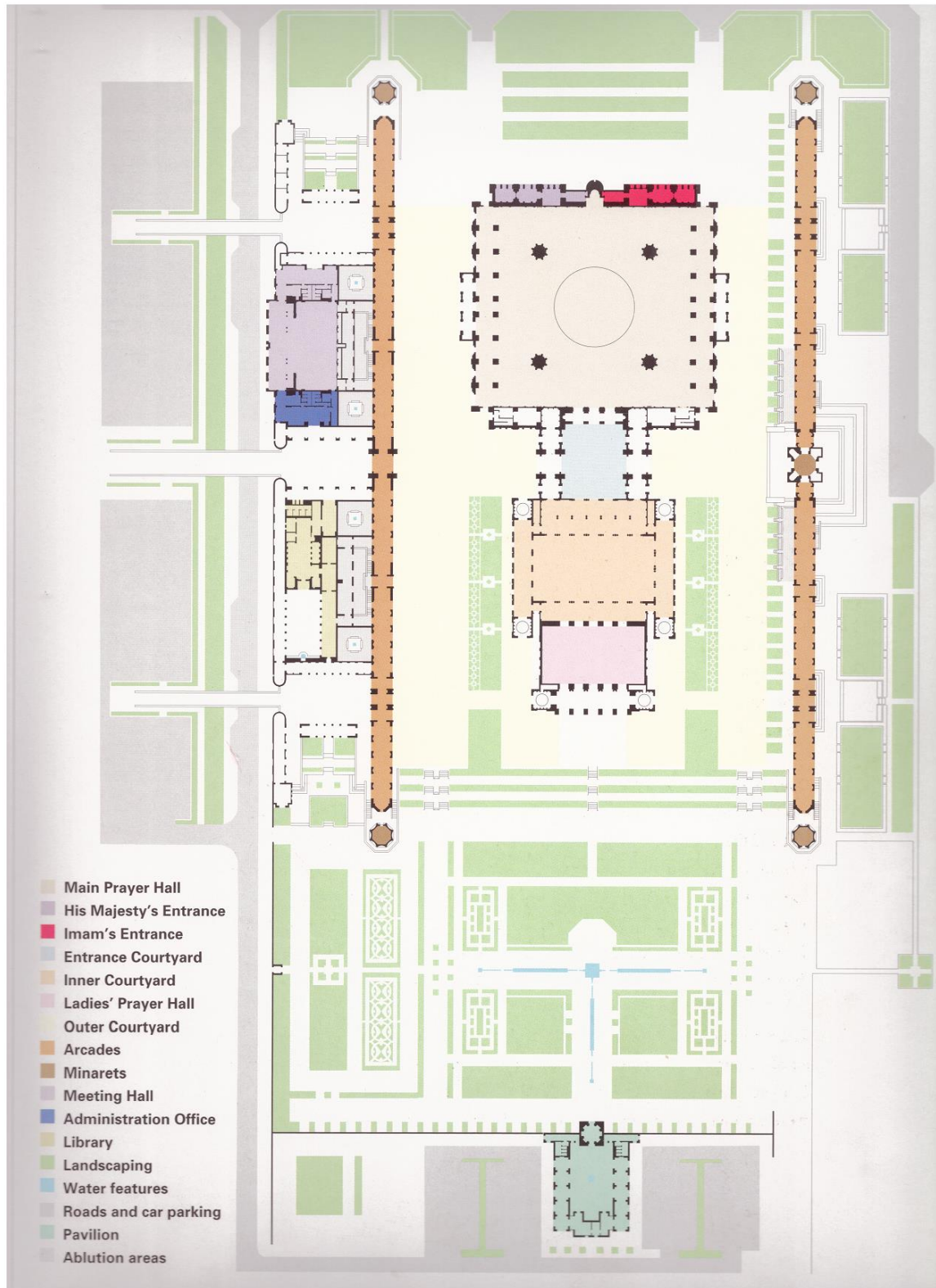
Figure 8.65: Layout of the Sultan Qaboos complex. Source: (Damluji, 2007, p.23).

Legend:
- Main Prayer Hall
- His Majesty's Entrance
- Imam's Entrance
- Entrance Courtyard
- Inner Courtyard
- Ladies' Prayer Hall
- Outer Courtyard
- Arcades
- Minarets
- Meeting Hall
- Administration Office
- Library
- Landscaping
- Water features
- Roads and car parking
- Pavilion
- Ablution areas

Figure 8.66: The domes of north and south riwaqs. Source: (Damluji, 2007, p.23).

To meet the objective of incorporating many Islamic cultural design, the architect was encouraged to synthesis a decorative program of geometry, floral pattern, proportion, symmetry and repetition within the mosques architectural elements. It could be said that almost each element in the mosque offers a different version of form and decorative design influenced or inspired by a specific Islamic art and culture. The emphasis on the detailed treatments of decorative work reveals the architect's attitude to integrate the crafts within the structural context of the mosque.

To elaborate, a breakdown of the mosque architectural elements, will generate a wider understanding of the architect's approach in combining variety of Islamic heritage and cultural vocabulary, forms and decorative motifs within the mosque architectural context.

8.7.1 Mosque architectural elements: Influence and decorative program

a) The arches

The stylistic formality of arches is of different cultural references. For example, the arches of the southern three main gate entrances, which represents a model example of the 'wall as volume': a design concept that Makiya emphasis in most of his projects. The arch is a three-center point built as continues layers, forming a third dimension of depth; the effect of this three-dimensional arch can be read as Makiya's interpretation of the arch-gated entrance of villages of old Oman regions, built of concrete and Omani local stone.

The form of these arches is of Abbasid arches found in historical mosques in Iraq and Persia, it is also similar in stylistic form, with arches of entrance court of Kuwait state mosque (Figure 8.67).

b) The riwaqs

There are two riwaq built unattached to the main mosque building, located on the north and south of the complex with minarets placed at both the ends of each riwaq at a height of 45 meters. In addition, an extra minaret was erected at the centre of the north riwaq which rises up to 90 meters. The two riwaq which are symmetrical in dimensions, were positioned separately from the main building and designed with open ends; a spatial arrangement that resembles an image of the old city wall edges.
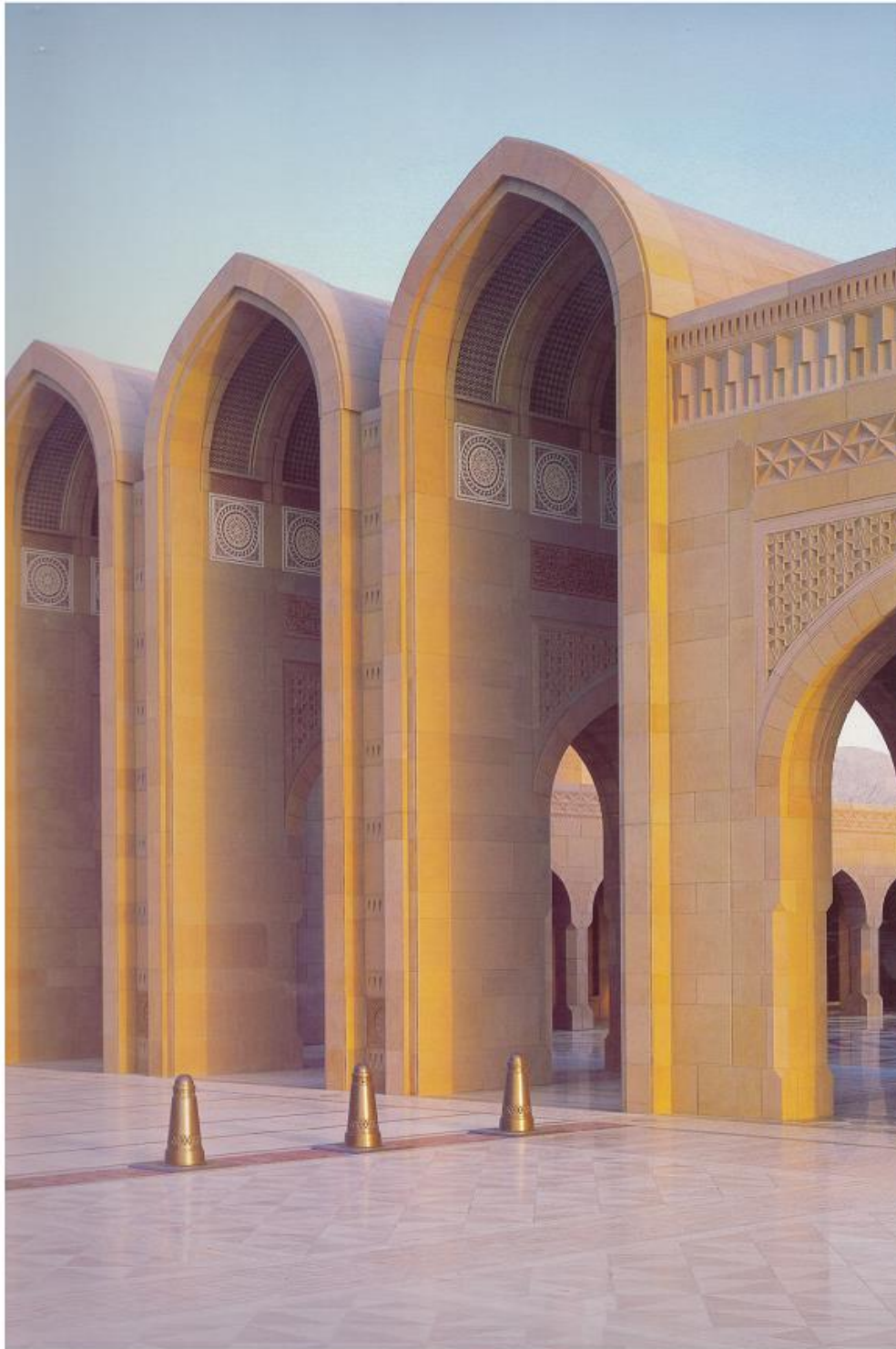
Figure 8.67: Arch-gate at the south riwaq, leading to the outer sahan. Source: (Damluji, 2007, p.45).

However, it is not clear why the two riwaqs are placed parallel to each other and not physically connected with the mosque's prayer hall? Taking into account, the distance the visitor will

have to walk before reaching the prayer hall; from the car park area at the south, to the main three arch gate entrances, which in turn lead into the outer sahan. Beside its spatial employment as transitional space between the sacred and the outside space, riwaqs are usually associated with entrance leading to prayer hall, that provide a shaded area in order to prevent the harsh sunlight which might cause a discomfort to the mosque's visitor. In the interview with Heaps (2016), he commented on this, saying 'The two riwaqs delineate the edge of the monumental platform on which the primary, sacred elements of the mosque are positioned. This positioning forms an open ended maidan which we call the Outer Sahan.'

Figure 8.68a: Niches of 'Timurid interpretation' hall in the south riwaq. Source: (Damluji, 2007, p.210).
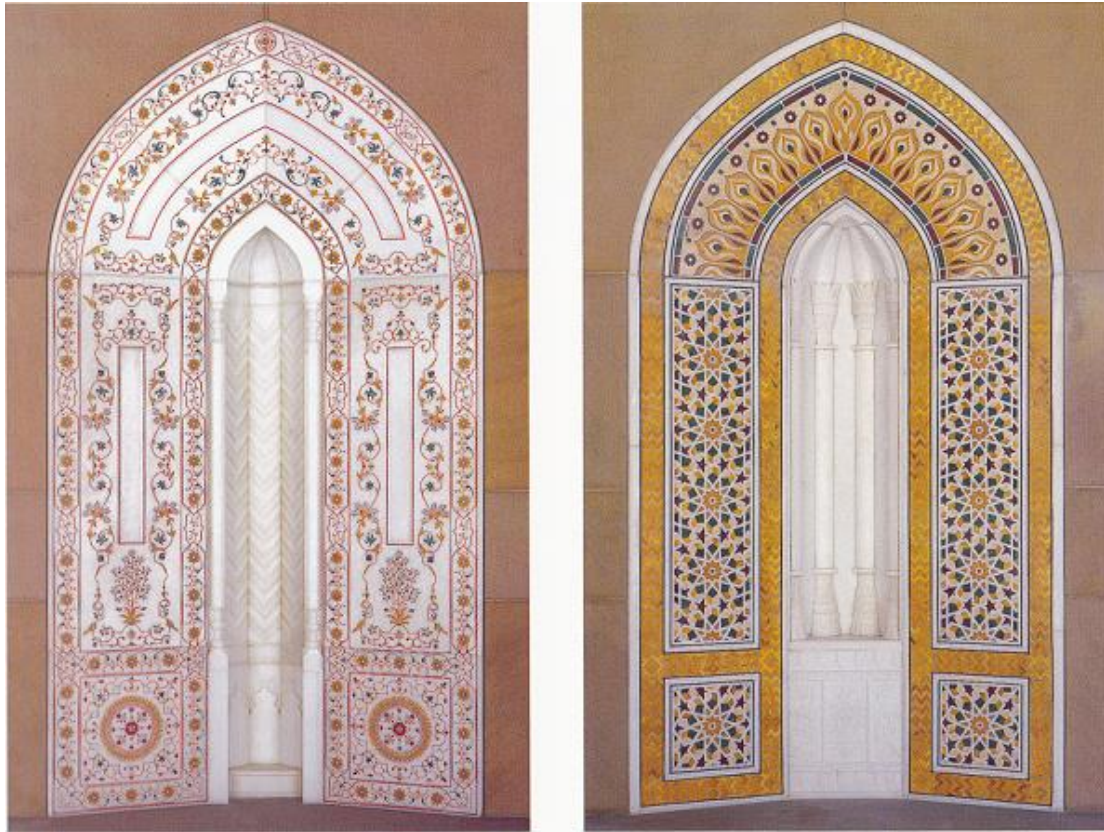
Figure 8.68b: Niches from the 'Islamic Indian Art' hall in the south riwaq. Source: (Damluji, 2007, p.207).

Apparently, the two riwaqs defined the mosque's spaces, acting as boundary walls. Nevertheless, the architect's placement of a number of riwaqs embedded adjacent to the prayer halls can be read as part of the spatial organisation which can be translated as indication of Makiya's vison of building the north and the southern riwaqs as separate architectural element to express the monumentally of the mosque. The aforementioned riwaqs are placed on three sides of the entrance courtyard of the main prayer hall, in addition to a riwaq at the western side of the main prayer hall, incorporating private entrances of the Sultan Qaboos, and the imam entrance.

Moreover, it can be interpreted that Makiya was searching for a design offering the flexibility in which a cultural museum can be incorporated within the mosque vicinity without shifting the focus from the mosque itself. That said, he sought to find a solution where the visitors of

the mosque can access the museum as isolated building without being in direct contact with the mosque's main prayer hall.   Heaps (2016), described this approach of Makiya as follow:

from the outset, the Riwaqs, which are divided by entrance points into a total of 12 "rooms", were seen as a museum of Islamic and Pre-Islamic decorative art from the wider Islamic region. We have in these areas rooms dedicated to the Pre-Islamic arts of Egypt and Byzantium, rooms dedicated to the art of the various regions of the Islamic world, to the Textile and silverwork designs of the Arabian Peninsula and rooms dedicated to Islamic designs using contemporary techniques and aesthetics.

Some example of these rooms, which includes niches that represent the different range of Islamic and Pre-Islamic arts are illustrated in (Figure 7.68a and 7.68b).

c) Minarets

The number and height of minarets, is one of the prominent architectural features of the mosque, even though the central minaret, located in the centre of northern riwaq, is double the height of the other four minarets, they all shares the same architectural vocabulary and expression. 'from a distance, these minarets are reminiscent of the mosque-madrasa of Sultan Hassan in Cairo-a mildly historicist effect, which was apparently intended' (Al-Salimi et al., 2008, p. 94). (Figure 8.69)

It can be argued that Makiya shifted his approach of minaret design as applied in Khulafa mosque and state mosque of Kuwait, where he used single minaret with distinguishing height compared to the mosque elevation height. For example, in Khulafa mosque the minaret stood at 250 meters and in Kuwait it stood out 70 meters.

Figure 8.69: View of the central minaret and the corner minaret at the back. Source: (Damluji, 2007, p.210).

8.6 Conclusion

KSM which should have been an expression of national identity, turned to have different references of historical precedents relating to the Persian and Abbasid architecture. It is also, represents Makiya's own collective memories and experiences in Iraq, where his formal architecture language became more authorized and started to be formulated and developed furthermore in his later projects.

According to Kanan (2016) even though, that Makiya did not utilised the local architectural culture in the design of KSM, his residential projects in the Gulf region was influenced by the Kuwait vernacular architecture; 'Kuwait for my father was indigenous architecture, and what I know for fact is what influenced him was the indigenous architecture; the houses architecture, the local traditional streets, that did had influence on his house designs in many parts in the Gulf, and from then onwards, this thing applied to other parts of Arabian Gulf '.

According to Lewcock and Freeth (1978, p.46) 'on the basis of the surviving evidence in the northern Gulf, vernacular Kuwaiti architecture does not in any of its essentials derive from Iran. Nor does its domestic style' nevertheless, in his approach, Makiya seems to promote the notion of a monumental scale over the value of incorporating the mosque to be reflective of its local traditional environment, which led in creating discontinuity, and less harmony and unity with its surroundings. Makiya did not turn to the traditional Kuwait architecture, to reflect the ethnicity and nationalism, as it is indicated by his attitude towards neglecting its cultural value or specifications, and opted to embodied diversity of Persian and Iraqis stylistic forms and elements into the KSM design composition.

While the design of KSM was influenced by the Abbasid architecture, it was also, reflecting to some extent, a Persian design. It can be compared with Shah mosque in Isfahan, Iran, in terms

of architectural forms; in the selected forms of arches, used in the facades, portal entrance and in the interior arches of the prayer hall, which can be described as foreign elements to the Kuwait architectural environment (Figure 8.70).
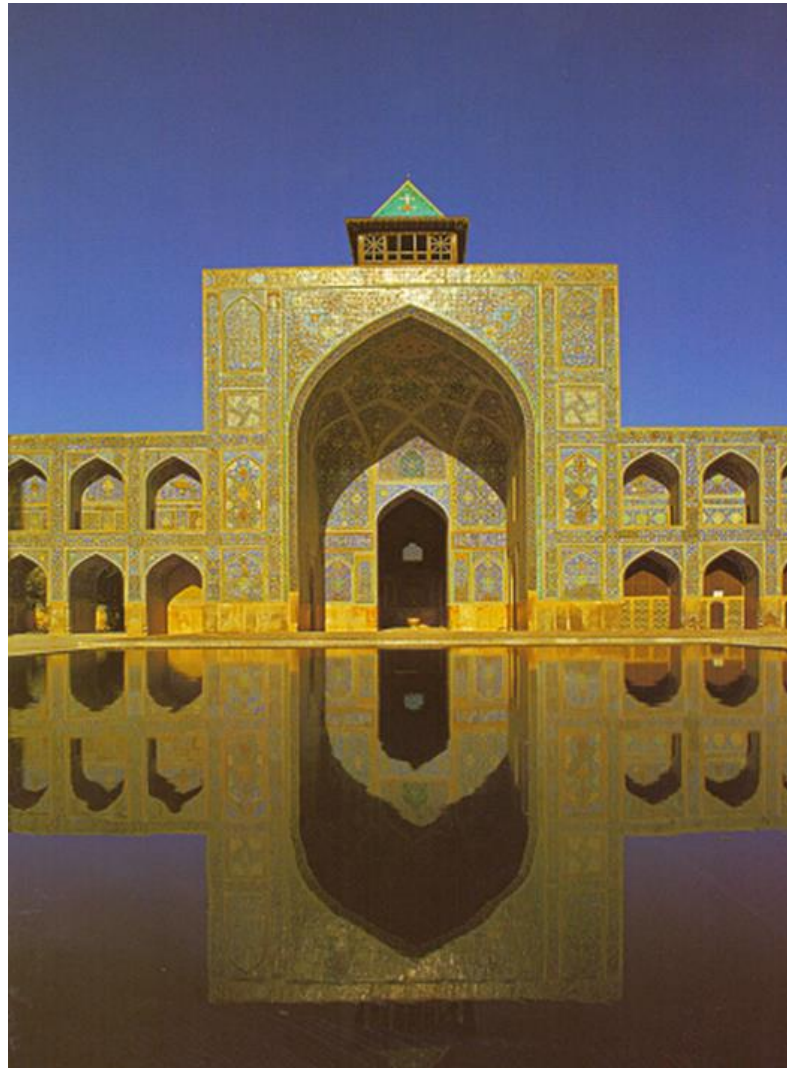
Figure 8.70: Western Iwan at the Shah mosque in Iran. Source: (Stierlin, 2009, p. 260).

Even though, Makiya original decorative theme was not applied in KSM, his original rendering of elevations of the interiors, shows his close attention to the details of the aesthetic work, and that could be considered one of the factors that distinguish his mosque projects. He applied different types of calligraphy of Arabic scripts, geometry and botanical Ornament, not only to enhance the design but also, to be integrated with project as whole, and not as an added part.

He values the meaning in which these elements represent. As he stated that 'architecture and fine art are one. Fine art was not an edition in our culture, but an organic part of architecture. Decoration, either by stucco or woods are fine art work that is essential in architectural work, all fine art works were functional in Islam. Muqarnas and arabesque are both fine art, but they are also, two main factors and fundamentals in Arabian architecture' (al- Hindawi, 2013, p. 309).

The other factor, which can be considered to distinguish Makiya's design, is the design principles that he developed through his projects over the years. In Khulafa mosque, he began to adopt the wall bay unit which was more advanced in KSM, by applying the concept of wall as volume (Figure 8.71). Kanan (2016) explained this further in the interview by saying that:

> There are two very important principals come together; firstly, the traditional mosque, what it represents, the wall bay unit coming out of thick wall character, and on the other hand, modern materials and technology to keep the thick wall character, but to change it in a way that is without a doubt modern. And I think that it was extremely successful in KSM. The hanging; the way which concrete allow you to suspend panels up above and move them backwards and forwards to develop the space, as a kind of enveloping thing, that is also very successful. Much more developed in KSM than Khulafa, in regard to his thinking and how to use modern technology.

Figure 8.71: Details of a wall bay unit on the exterior wall of the mosque, with 'hanging arch' that Kanan referred to in his quote. Source: (Commissioned by the author).

CHAPTER NINE

CONCLUSION AND DISCUSSION

9.1 Introduction

This is the concluding chapter of this analytical study of the formal and spatial languages of the Arabian Gulf Friday mosque from 1975 to 2010. Chapter two introduced the methodology of the thesis and the tools of analysis that have assisted in examining the formal and spatial languages of the Friday mosque transformation process.

Chapter three aimed to define the 'Arabian Gulf' by providing a geographical definition and a discussion on its historical and cultural contexts, in addition to a discussion on the socio-economic environments of the Gulf. In Chapter four, the Arabian Gulf Friday mosque was defined in terms of its traditional forms, typologies, and socio-political implications and expressions. Chapter five focused on the transitional phase of the mosque and the change factors, with emphasis on the regionalism implications. Chapters 6 to 8 constituted the core of the thesis by analysing the main and sub-case studies of the mosques of Abdel Wahed El-Wakil, Rasem Badran, and Mohamed Makiya in the Arabian Gulf cities of Manama, Riyadh, Kuwait, and Muscat.

This chapter is divided into four parts. The first part replicates the entire study by highlighting the initial research problem, aims, objectives, research questions, and methodology. The second part includes an analytical comparison of the three architects and their contributions to the Friday mosque architecture in the Gulf. The chapter then proceeds to the third part, which

is dedicated to the major findings and conclusions of the thesis. The fourth part concludes the chapter with some recommendations for future research.

9.2 Research Problem, Aims, and Objectives

The Arabian hypostyle mosque, an architype that originated from the first mosque built by Prophet Mohamed in Madinah, dominated the mosque designs used in the Arabian Gulf countries until the 1950s. However, the mosque in the Gulf had evolved throughout the years, with a rapid change witnessed in the post-oil discovery era as result of different factors that contributed to changing the mosque architecture in the Gulf, which led to the creation of new architectural and spatial languages of the Friday mosque.

The author aims to understand the process of transformation of the formal architectural and spatial languages of the Friday mosque in the Gulf by investigating the traditional mosque architectural language in the region, supplemented by a detailed examination of the selected mosques of the key actors who influenced the mosque architecture during the post-oil discovery era. It aims to identify the roles and contributions of the three main architects: El-Wakil, Badran, and Makiya, in forming new architectural and spatial languages for the Friday mosque and to what extent their design approaches critically incorporate the traditional precedents of the local traditional Gulf architecture, other broader regional Islamic influences, and the wider modernist influences.

In order to be able to address these questions, the thesis first covers the different typologies of the traditional mosque in the Gulf in Chapter four to establish a foundation on which further comparison can be made. Even though the primary function of the mosque, as a place for conducting prayer, remains unchanged since inception, with the advent of more wealth and ease of access to new building materials and construction methods, the traditional mosque design went through a transformation, especially after the declaration of independence of the

Arabian Gulf countries in the early 1970s. This led to the discussion of the transitional phase in which the mosque shifted from being simplistic in its architectural programme to a more complex mosque, with discernible changes in its formal and spatial architectural contexts, resulting in the emergence of the 'hybrid-style' mosque, wherein more than one architectural influence can be seen.

In Chapters 6, 7, and 8, the objective was to examine the three-key architect's critical regionalist positions by examining their mosque projects in the selected cities and how their spatial and formal languages responded to the dynamics of the varied cultural contexts.

All of the above are linked to the main research question: How can the spatial and formal languages of the Friday mosque of the Arabian Gulf be identified in the period of 1975–2010? The question under discussion brought forward sub-questions, which collectively assisted in answering the main research question. These questions are the following: What are the characteristics and typologies of the historic mosques of the Arabian Gulf in the pre-oil period? What key socio-political factors have played a significant role in the formation of these spatial and formal languages? It also asserts the question of what has been the contribution and influence of the key architects and thinkers in the formation of these spatial and formal languages?

9.3 Approach and Methodologies

The nature of this research is a case-based analysis, as a number of Friday mosques were selected as a representative sample of mosque architecture in the area during the study period as follows:

- Chapter 6: The main case study in this chapter is the Yateem Mosque in Manama, designed by El-Wakil. Four sub-case studies of his mosques in Jeddah were discussed

briefly in the beginning of the chapter in order to provide a wider understanding of his formal and spatial languages.

- Chapter 7: The main case study in this chapter is the Qasr Al-Hkoum Mosque in Riyadh, designed by Rasem Badran. Moreover, his entry to the Baghdad State Mosque, and his mosques of Kharj in Saudi Arabia and the Ali Ben Abi Talib Mosque in Doha were all discussed as sub-case studies.

- Chapter 8: The state mosque of Kuwait, designed by Makiya, is the main case study of this chapter, followed by an examination of the Sultan Qaboos Grand Mosque in Muscat, Oman.

The approach adopted in the analytical studies of these mosques was based on the comparative approach by adopting two strategies. First, we explore the precedents of the local traditional Friday mosque's characteristics along three verticals: spatial layout, building materials and techniques, and design detail. In addition to looking into the traditional urban fabric of the selected city, we investigate how it interacted with the socio-political position of the Friday mosque. Moreover, traditional domestic architecture was partly included in this study within the aforementioned context. Second, the architect's mosque projects in the Gulf region were analysed to establish an understanding of the architect's architectural approaches and language. This was primarily done in Chapters 6, 7, and 8. Third, we present a brief comparison between the architectural language of the three key architects to develop a better understanding of how their contributions influenced the mosque design landscape in the area, which can be found in this chapter. The combined outcome of the thesis chapters should enable us to define the Friday mosque formal and spatial languages and facilitate the understanding of the transformation of both the historical and contemporary mosque architecture in the region.

The case-study strategy employed a qualitative methodology. This allowed the author to utilise a number of data collection, interpretation, and examination tools within the case studies. The

collected data are categorised into three groups based on the identified areas of this study. Each group of collected data is aimed to target a specific purpose. The first category is related to the understanding of the traditional precedents of the Friday mosque. It encompasses a range of methods, covering literature studies of the historical mosques in the Arabian Gulf, archival research, and studies of the pre-oil settlements of the Gulf urban environments. This was meant to build a historical view of the mosque character and its traditional characteristics. The second category of collected data is meant to reveal the design approach and contributions of the three key architects by conducting two sets of structured interviews, with the first conducted with the key architects themselves, where possible, and some of the other main architects who were involved in the design process of the mosques selected in the study. These are El-Wakil, Badran, Kanan Makiya, and Godfrey Heaps. The second set of interviews was conducted with academics, authors of publications on the subject of the Arabian Gulf architecture, and government authority representatives.

The third and final category of collected data were based on field trips and site visits of representative traditional and contemporary mosque sites and the case-study sites, taking observations and collecting the architectural drawings (where possible). This category of data was of an investigational and exploratory nature and was used primarily in the analytical core of the thesis. The data derived from all three categories were analysed and provided the author with the required tools to critically assess the case studies.

The case studies were selected for several reasons as discussed below.

1. Socio-political Position, such as the State Mosque

State mosques are essential to express the national identity of the new developing GCC countries. Each state mosque is considered a building of 'national importance', which should evoke and consolidate the country's cultural identity within its architectural formation.

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Therefore, the author placed importance on analysing the state mosques of the selected geographical region of coverage.

This showed that Badran's design of the state mosques in Riyadh and Makiya's design of state mosques in Kuwait and Muscat were winner schemes of international competitions, in which Arab and foreign architects were invited by the client, represented by a governmental authority.

2. They Represent Distinctive Architectural Languages

The case studies differ not only in terms of the geographical area in which they are located but also in terms of their variations of architectural languages, regional influences, spatial contexts, and expressions. Nevertheless, they have common criteria, such as retaining the primary liturgical framework of a mosque, which has mostly remained unchanged throughout the centuries.

These criteria include a) orienting the mosque towards the Qibla direction; b) *mihrab* as a niche architectural element in the middle of the Qibla wall, which was, in the early mosques in Islam, a non-physical form but a place dictated for the imam who leads the prayers; c) minaret, which became an architectural symbol of *Athan* (calling for prayer), whereas in the past, it was performed on a place at the mosque foreground, elevated space, or on the roof of the mosque; and d) *sahan* or courtyard, which varies in size and location within the mosque spatial context.

Qasr Al-Hkoum is distinctly contemporary regional and resembles the traditional images of the old Riyadh. Its architectural language can be considered to cross the boundaries between the contemporary regionalist and traditionalist. It also shows Badran's sensitive language and feelings towards local traditions and the urban context. His formal architectural language of incorporating traditional elements within the context of contemporary architecture can be perceived as an attempt to satisfy the client's request as well as aptly achieving a 'local

architectural identity'. He emulated the Najdi architecture by the abstraction of forms and spatial organisation of historical monuments of palaces, forts, and mosques.

The mosques of El-Wakil and Makiya reflect the broader regional influences of Egypt and Iraq, respectively, synthesised within their traditionalist-contemporary and classical-modernist architectural languages, respectively, and are formed by the architect's reinterpretations of the regional cultures.

9.4 Mosque Traditional Architecture: Overview of Typologies

It is essential to build an understanding of mosque identity and what it represents and of the liturgical constraints on its design in order to formulate the make-up of the formal and spatial language of the mosque. Below is a general brief of the results of the study.

The architecture of the mosque has remained relatively unchanged since the early years of Islam in the Arabian Peninsula, with rapid change only visible after the discovery of oil and the declaration of the independence of the Arab Gulf countries in the 1970s. Thus, for the purpose of this study, the mosque architecture was categorised based on two specific periods: before the oil discovery, set as the time before the 1930s, and post-oil discovery, covering the following decades. The mosques in the Gulf region provided several typologies as subsets of the Arabian hypostyle, which were presented in Chapter four. For example, in Bahrain, mosques are mostly built with flat roofs and single *riwaq* with an upfront courtyard. The minaret is small and squat. In Doha, the Qubib Mosque represents one important typology of the traditional Qatari Mosque, with its multiple domes and single minaret. In Najd, the mosque is characterised by keel arches used in the *riwaq* and prayer hall. Furthermore, the minaret was of two forms, one of which is square in plan and structure, and the other is a tower-like small minaret rising through the dense urban settlements.

The traditional urban fabric of the cities of Muharraq, Doha, and Kuwait shares the same anatomy of their building environments. They all have the *Freej*, which in the past has one or more Friday mosque named or built by the locals on the edges of the *Frjan*, or on a visible location in the interior. While the Najd urban fabric is more condensed and interrelated, thus the Friday mosque is more melded into the fabric of its urban context.

9.5 Comparison Analysis and Conclusions

Although El-Wakil, Badran, and Makiya all claimed they incorporated the local architecture in their mosques design, through the examination of their selected mosques in the Gulf, the outcomes yield different interpretations. The author examined each architect's projects (case studies) by first conducting a brief exploration on the local traditional architecture of the selected country in order to investigate how they addressed the local cultural heritage and its expressions and to determine which framework the three architects incorporated into their design. This was also meant to map how they represented their formal and spatial languages within the aforementioned context.

The comparison of the three-architect's formal architectural and spatial languages will be based on the following criteria:

    a) **Urban considerations and the mosque**

The three architects have exhibited different approaches when they designed the mosques, with varying degrees of success in responding to the urban context. Each one of them has attempted a rigorous analysis of their mosque projects to integrate the mosques within their immediate urban context and the surrounding areas.

In the Qasr Al-Hkoum Mosque, Badran seems to be the most successfully responsive regarding the urban context of the mosque, as he has given the socio-political aspects of the mosque a generous amount of attention, which shows in his early analytical studies, drawings, and

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sketches. He was aiming to relate the mosque to its original functions that had, in the past, extended from being a sacred place to a social and educational centre. The project has its own challenges due to the pre-existing spatial elements of squares, shopping units, roads, gates, and the palace, which all were moulded into one architectural composition. Badran searched for a mechanism in his design to employ an urban system that would link the mosque with its immediate context and the surrounding buildings and streets. The success of his urban solutions stems from his revival of the socio-cultural aspects of the inhabitants of the area that was once more vibrant but declined over time for socio-political reasons.

Badran turned the Qasr Al-Hkoum area, which occupies a central location of Riyadh city, into a vibrant space by allowing the use of the squares to host festivals and celebrations and to become a tourist destination. In his approach to the urban settings, Badran aimed to make the mosque accessible to all visitors by planning an urban design that respected the urban limitations of the site, yet provided direct and indirect connections to the mosque from the immediate urban context (squares and streets) and the surrounding buildings.

He also affirmed his urban approach in his design of the Baghdad State Mosque, which was the winning theme of the design competition but has never been built. The architectural drawings and the architect's analytical sketches of the Baghdad mosque design shows his futuristic vison of creating a 'city' within the mosque and its vicinity, similar to what he achieved in the Riyadh mosque.

In contrast, Makiya's Kuwait State Mosque (KSM) was less responsive to the immediate urban context of the mosque. Even though the site of the KSM has its own constraints and differs from the Qasr Al-Hkoum Mosque's urban context conditions, in terms of its design ability to physically connect the mosque with the adjacent Seif Palace, due to the pre-existing urban configuration, as the streets run along the four sides of the site and thus separate the mosque

physically from the palace and surrounding areas. Therefore, Makiya should not be held accountable on this part of connecting the mosque in a relation to its wider urban context.

Furthermore, his spatial language in the mosque was able to resolve certain issues, such as car parking, but, at the same time, did not fully resolve the issues that resulted from the environment and the prevalent heat when visitors access the interior of the main building via the main courtyard. Car parking seemed to be a critical issue during the design process. It was originally requested by the client to be a multi-story building, but Makiya decided to put it underground of the main *sahan*. It can be argued that he was right and that this solution resulted in providing more space to the mosque, which could have been the natural expected outcome. However, he then placed the main building at the back edge of the site and placed an open – relatively large – courtyard upfront, which is similar in dimensions with a prayer hall, as they are both 5,000 m^2 in total area. This could indicate that his preference for the kind of monumentality and grandeur, which is seen more in the architecture in Iraq, Iran, and central Asia, eclipsed his understanding of the urban fabric of the Kuwait traditional building environment, where the historical mosques of Kuwait were more dynamic in their spatial context and were much more compact and integrated within the urban context.

It can be useful to compare his design entry for the Baghdad State Mosque with Badran's entry scheme and to examine the different urban approaches of the two architects (Figure 9.1). Makiya's design appears to be monumental, as expected, but his mosque's spatial context seems to be more enclosed and contained (Figure 9.2). Meanwhile Badran's design was integrated with the natural environment within the mosque spatial organisation, which can be seen in his placing the palm tree valleys beside the artificial water lakes and in hiding the car park area behind the palms and orange tree valleys at the back of the mosque, as discussed in Chapter 7.
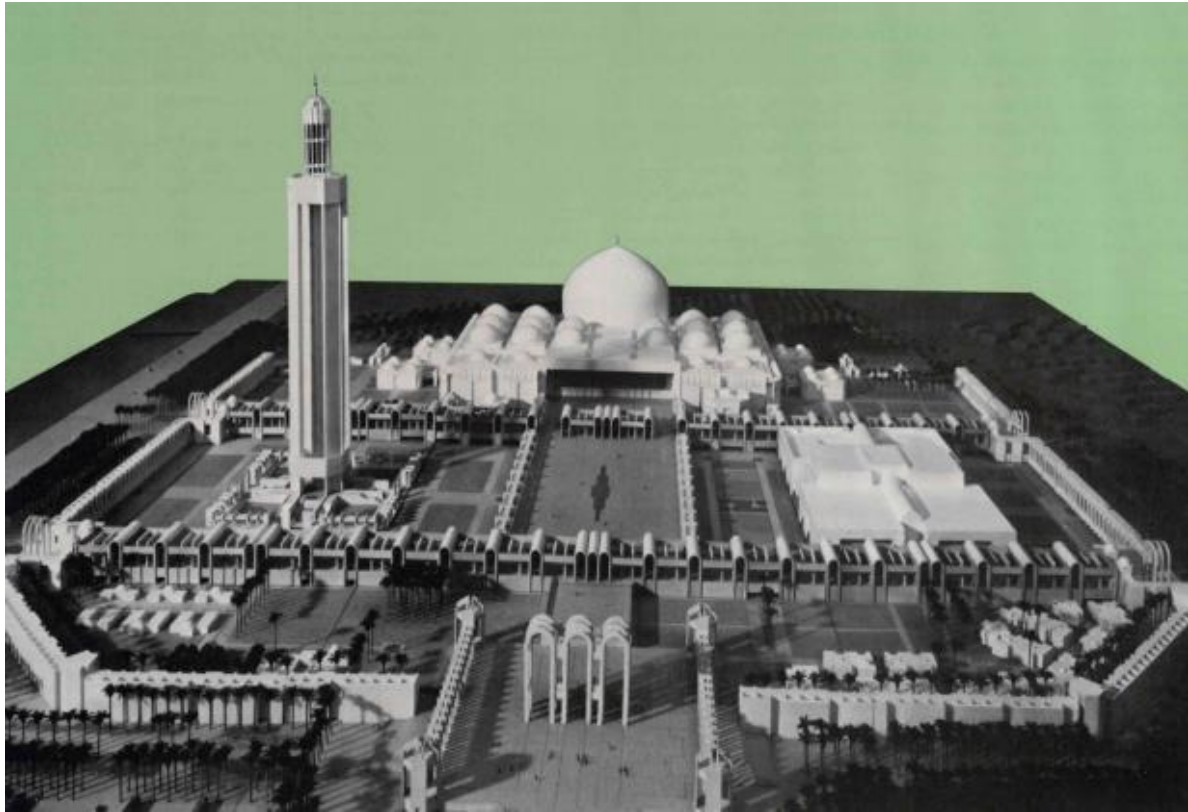
Figure 9.1: Model of Makiya's design of Baghdad State Mosque. (Source: Aga Khan Documentation Center at MIT; Mohamed Makiya Archive).

Makiya's design for the Baghdad State Mosque employs the same architectural language found in KSM and the Muscat Grand Mosque with slight differences. His designs are symmetrical by adopting the spatial concept of axiality, as he based his planning of all three mosques' architectural contexts on a vertical axial of hierarchy of transitional spaces, with the vertical axis built upon the *mihrab* central axis that stretches to the main gates of the mosque. By doing this, he placed the main building of the mosque at the back edge of the site, leaving the main courtyard in the front, which acted as a central 'square' (Figure 9.3).
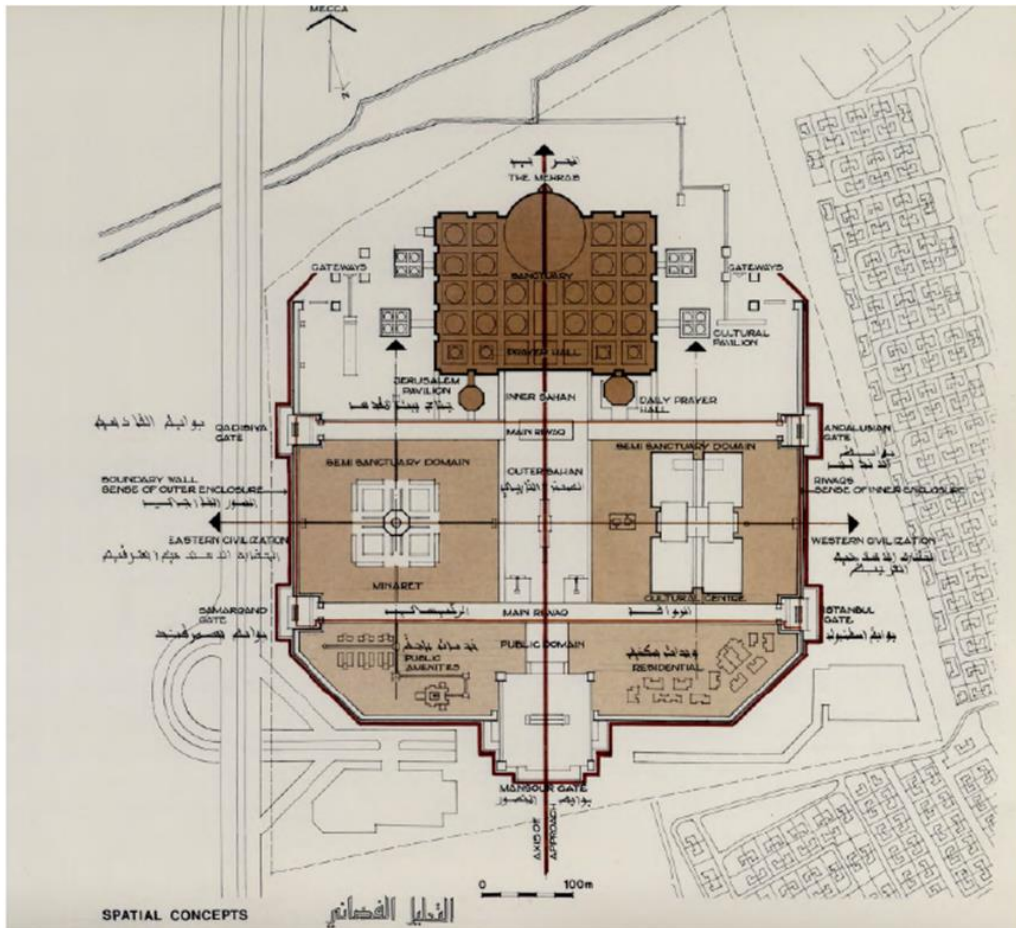
Figure 9.2: Spatial concept of Makiya's Baghdad State Mosque. (Source: ibid.).

This spatial arrangement is more evident in the Baghdad Grand Mosque and KSM. While in Muscat, by the time his architectural language became more formative, he placed the mosque main building (men's prayer hall) and the women's prayer hall building at the centre of the mosque. Badran took another approach; the conceptualisation of his Baghdad State Mosque design is based on the unit-shaped buildings, which was the main theme of the project. In that respect, Badran tried to humanise the scale of the building and to avoid the monumental expression. In his design, the minaret and dome are not imposing against each other, as in Makiya's design, discussed below. In the riwaqs, he adopted the wall arcade as a spatial concept, which also contributed to scaling down the mosque as a whole mass.

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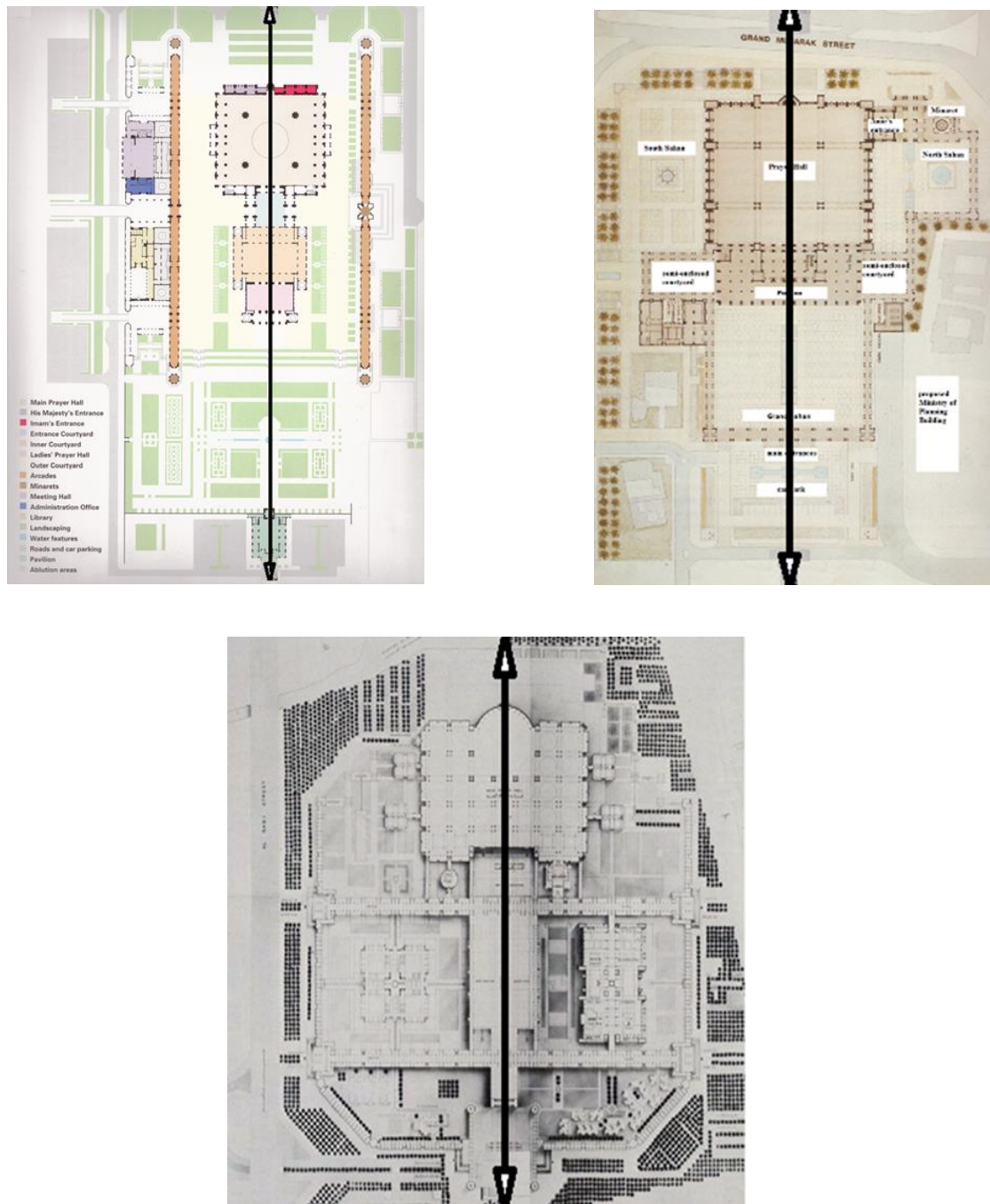
Figure 9.3: Makiya's symmetrical plans of his mosques in Muscat and Kuwait and his entry design of the Baghdad State Mosque. Source of Baghdad State Mosque plan: (Aga Khan Documentation Center at MIT; Mohamed Makiya Archive).

Badran reintroduced his contemporary expression of *riwaq* in the Qasr Al-Hkoum Mosque, where he called them 'the living walls', and it could be said that this was one of his architectural expressions that characterised his spatial language in the mosque design. His designs of the Ali

bin Abi Talib Mosque and al-Khour Mosque (both in Doha), and his entry design for the Great Mosque of Qatar are affirmations of his contemporary vision of *riwaq*, where both were designed with an interactive wall arcade to link the mosque with its dynamic functions (Figure 9.4).

Figure 9.4: Badran's design proposal for the Great Mosque of Qatar. Source: (provided personally by the architect).

Makiya's architectural language draws heavily on monumentality. His entry for the Baghdad State Mosque is a perfect example for this by its scale and the mass of the mosque. The most distinguishing features are in the dome, which rises up to 85 m from the ground and has a diameter of 93 m. The minaret scale is extremely odd compared to the whole scheme; the 200-m, sky-escaping tower seems to be intended by Makiya to dominate the Baghdad skyscape (Figure 9. 5).

The architectural composition implies the architect desired to give the mosque a cultural focus for the Iraqi nation. As it is a state mosque, and this would be the aim of the design of all architects participating in the competition. Makiya wanted a design that is reminiscent of the Abbasid culture through its monumental building. He wanted to provide a grandeur to it. By doing that, he risked maintaining the human scale to some extent. One could imagine the reaction of a person standing next to the 200-m high minaret. It would make the individual feel small or even dwarfed. This is not a feeling that will coincide with one who wants to contemplate in a mosque.
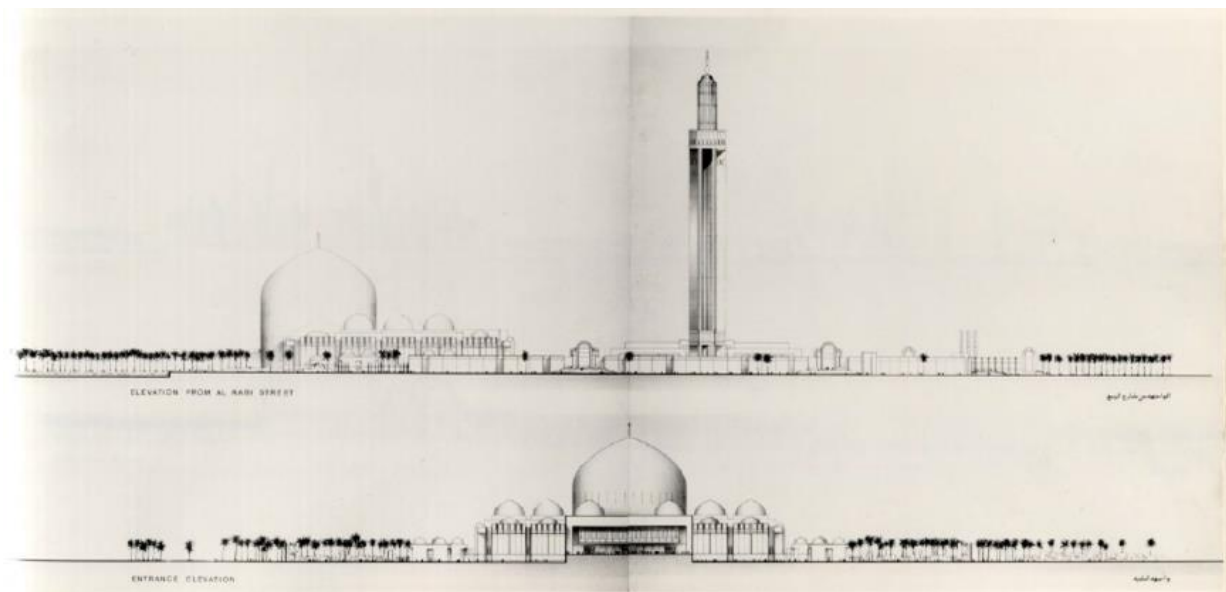
Figure 9.5: Elevations drawings of Makiya's Baghdad State Mosque design. Source: (Aga Khan Documentation Center at MIT; Mohamed Makiya Archive).

We move on to El-Wakil, who has been criticised for being less sensitive in his design to the urban context of his mosques. In Chapter 6, the examinations of his mosques in Jeddah city have reasserted the critics' claims, while highlighting a new finding. The analysis of his mosques shows that the designs evoke a sculptural appearance by his own high standards of aesthetic and visual architectural appeal. It could be said that his design philosophy centres on 'buildings as sculptures', a phrase that might best describe most of his mosque design concepts.

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He also faced some criticism for repeating his design regardless of the local architectural identity, where he is recycling his mosque designs over and over in many cases. Nevertheless, he contextualised the mosque with a contemporary traditionalist manner that no other architect was able to do, and his success in introducing the 'building as a sculpture' reflects his high skills and talent.

In comparing his architectural language with Makiya, El-Wakil is more selective in his formal language. In his design, he relied on the diversity of Egyptian vernacular architecture, such as in the Nubian or Islamic architecture of Mamluks, Fatimid, and Ottoman, as opposed to Makiya who depends on the Abbasid and Persian forms and expressions. Nonetheless, El-Wakil's formal language was consistently maintained throughout his mosque projects, rarely exhibiting a shift or different approach, while Makiya, on other hand, developed his formal and spatial language from one mosque to another.

Makiya's wall-bay unit, as a design concept has evolved from the Khulafa Mosque to his latest mosque in Muscat, at the southern Gulf – and the Gulf in general – where he developed it further. It became a 'wall as volume', a third dimension of the space. Whilst in Badran's work wall was a space for dynamic functions.

b) Construction materials and building technologies

El-Wakil, influenced by Fathy, has used burned bricks in his mosque construction as the main construction element. It distinguishes him from the other two architects. His stance was put to the test when he designed and supervised the building of the Qubbah Mosque in Madinah. The client was not happy with El-Wakil's decision to use fired bricks and suggested that the architect could use prefabricated units. The architect – with his anti-modernist stance – rejected this immediately and argued that a mosque should be respected in regard to what it represents:

a sacred place that will be 'disturbed' if a fabricated industrialised material is used as its primary construction material. This was a logic that, in the end, convinced the client.

In contrast to Badran's experience in Qasr Al-Hkoum, where he insisted on using prefabricated units for the mosque construction and had some objections from the ADA officials, he wins the argument at the end. This contradiction of construction methods indicates how the two architects are intellectually different in their architectural and conceptual frameworks.

c) Client constraints and their effects on the mosque design

Badran recalled his experience in designing the mosque in Riyadh, during the construction process where he was given total freedom from the client to alter or refine his design. This is with no doubt is a very crucial factor to any architect to deliver his design in a complete version of his vision and expectations for the final outcome. In contrast to his projects in Qatar, which were faced with constant interventions from the client to refine his design, as was the case in his entry design for the Islamic museum for the Qatar design competition.

Lack of previous knowledge of architect construction techniques and approaches was the main problem that faced El-Wakil in his projects in Saudi in the 1980s. For example, in the design of the King Saud Mosque in Jeddah, he structured a design of a dome that needed to be built without the use of cement, and this raised objection from the engineers working with him who claimed that a dome that reached a height of 40 m would not survive without cement. El-Wakil insisted on his way to the extent that he signed a statement to bear full responsibility for building safety.

In Kuwait, Makiya has faced more interventions from the client. He was released early from the project, after the completion of the main structure of the mosque and just before the interior work started. Some of his design decisions were the subjects of long debates with the client, who made more changes to the mosque interior decorations. The immoderate decorations

yielded a different interpretation from what Makiya initially intended in the interior design of the mosque but had no effect on the mosque main structure.

9.6 Contributions and Influences of El-Wakil, Badran, and Makiya

When examining the mosque architecture in the geography covered by the thesis, three names come to the foreground as some of the main actors in introducing a new architectural vocabulary in terms of structure and design details and new construction techniques: El-Wakil, Badran, and Makiya. The work of all of the three architects left a visible imprint on the mosque designs in the region, as each of them introduced either new building techniques, such as the wall-bay unit by Makiya, or the dome vernacular construction method using pendentives and construction methods of old Egypt revived by Hassan Fathy and by El-Wakil, or the living-wall concept, the ventilation openings, and air-conditioning duct construction solutions introduced by Badran. Combined, the contribution of the three architects led to the creation of a new contemporary identity, with 'hybrid' styles becoming more and more prevalent in the area.

Badran (2012) stated when interviewed 'I am not a mosque's architect, I believed that I am a philosopher and a thinker on the subject of Islamic architecture'. This encompassing approach to Islamic architecture might explain his success in respecting the local architectural culture and reflects his profound understanding of the Najdi traditional architectural in his Qasr Al-Hkoum project. This is more evident when we compare his approach with those of El-Wakil and Makiya in their approaches to mosque design in their projects in the Gulf.

It seems that Makiya's approach reflects his philosophy, which is evident in his writings and published interviews, and in the spatial and formal plans he followed in his design, focusing on the transition from the outside world, the semi-sacred to the sacred, in consecutive steps that guide the worshipper to a spiritual space.

Regarding El-Wakil, even though he has never designed a state mosque in the Gulf region, he outnumbered Badran and Makiya in his mosque projects. In Saudi Arabia, he designed more than 15 mosques from 1980 to 1987, in addition to his mosque projects in Qatar, Bahrain, London, and other parts of the world.

His mosque architecture in the Gulf indicates his preference for Egyptian Mamluks, Fatimid, vernacular Egyptian, and Mediterranean vernacular architectural cultures over the local architectural traditions, as can be seen in some of the case studies presented in Chapter 6, where it was evident that he was inspired by the designs and construction techniques used in Egypt or by his mentor, Hassan Fathy.

Regardless of his attitude towards the local traditional Arabian Gulf architecture, his contribution to the contemporary mosque architecture in general is highly recognised by the architectural community worldwide. Serageldin (1996, p. 10) described his work as 'lays down a profound challenge to contemporary designers and which has had a far-reaching influence on a large number of architects in the Muslim world and the west'.

It could be argued that the three architects provided an intellectual meaning behind their projects, which is driven by their personal philosophy and visions in Islamic architecture. They draw the basis from which mosque architecture in the Gulf should be approached; their mosque projects offer lessons for mosque architects to recognise the flaws they have 'committed' in their mosques and how to avoid them for the future mosque projects.

9.7 Major Findings and Conclusions

The genesis of this research started with the assumption that the traditional Arabian hypostyle mosque in the northern region of the Arabian Gulf was transformed into a contemporary mosque. From that initial foundation, the research key question emerged: How have the Friday mosques transformed in terms of formal and spatial languages, and what were the contributing

factors in this transformation? Who has influenced these changes and by what means? Subsequently, aims were drawn, objectives were set, and sub-questions were formulated.

The ability of the mosque to transform and evolve throughout history points to its flexibility in absorbing new forms and spaces. There are no restrictions against the development of the mosque's architectural and spatial contexts, except that it should respect the liturgical framework that is fixed and remains unchanged (orientation to Mecca, imam confined place, a place for *Adan*/or minaret and courtyard). In fact, an act of prayer does not require a physical structure, only a clean place.

In the Gulf, the cultural and socio-political factors have shaped the mosque in the past; Friday mosques followed the typology of the Arabian hypostyle, synthesised within the urban fabric and have had a social position empowered not only by its design but also by its representation as a social entity. By the 1940s to 1950s, mosques started to change. They were enlarged, altered, and regional influences had come to the surface. This was the time at which the architectural movement advertised modernism as the new architecture idiom. Moreover, by the late 1960s and early 1970s, modernism was accepted and celebrated. Coincided by oil wealth, the social importance of the Friday mosque and its critical urban position started to decline and became a place to pray only, with the link terminated when the rituals end. The worshipper would visit the mosque during prayer times to listen to the Friday speech and perform the Friday prayers, then leave the mosque to come later, in a few hours for the next prayer of the day. Furthermore, the recent governmental security constraints on mosque accessibility have contributed to this pattern of relationship between the mosque and its users, as the mosque doors are open only during prayer times.

Towards the end of the twentieth century, the shortcomings of modernism and the ongoing debates over traditional identity have encouraged people involved in the architectural scenes

in the Gulf to move towards a new approach in the design of national buildings by producing a traditional architectural identity within a modern context. The rationale behind this was to maintain an attachment to historical precedents and national heritage to reflect the nation's traditional architectural identity.

Building state mosques was a trend during the 1970s and mid-1980s. In Kuwait, the brief called for incorporating Kuwait and Arabian Gulf traditional architecture into the design of the state mosque; however, Makiya failed to meet the client requirements in this regard, but it could be argued that he produced a monumental Friday mosque for the first time in the north region of the Gulf. In fact, it was the first state mosque to be completed and opened to the public in the whole Gulf region (the construction phases overlapped with the Bahrain Al-Fateh State Mosque). He presented a classical-modernist language through his conceptual framework of the mosque through the classical forms of the arches, dome, wall as volume, bay units, symmetry, and proportions, which have shaped his formal architectural and spatial languages. He validated the theoretical framework, which implies that Islamic architectural cultures can be developed as a continuous process. This is a notion he shares with El-Wakil, with a slight difference.

Except for the state mosques, the Friday mosques in the Gulf have become hybrids in their architectural expressions through incorporating many architectural references of Ottoman, Indian, Mamluks, Abbasid, Persian, and Arabian in the design. These are only a few examples of different architectural cultures; in some cases, it reflects a specific culture, whilst in other cases, reflects a collective of forms quoted from varies architectural cultures, in addition to the new trends that have no reference to any Islamic architectural culture. This led to the merger of different architectural expressions, where it became hard to specify what architectural language these mosques represent.

9.8 Final Discussion

The transformation is evident, and whether we accept its outcomes or not, the mosque has evolved. With this process, the focus was in creating an 'image' of Islamic culture with no regards to the Arabian Gulf local traditions, apart from Badran, whose intellectual work contributed to understanding and evaluating the traditional forms, spaces, and symbolic decorations. He influenced the architectural scene in the Gulf in his representations of a contemporary-regionalist language. Among the three architects, Badran seems to be the most successful in articulating a language that corresponds with the local architecture and maintains a contemporary expression by taking advantage of the modern technologies and local materials.

The overview of the Friday mosques in the geographic area of study, shows that whilst it maintained in general the same architectural spatial and formal language since the first mosque was built, in recent history it began to reflect a variation of different regional cultures due to easier access to skills and building materials and as a result of ease of travel, which led to wider exposure to different architectural styles, therefore, facilitating the introduction of the designs originating beyond the region.

Moreover, the review revealed that there is a gap in the architectural discourse of the mosque. Mosque architects in the Gulf should develop an understanding of the socio-cultural context of the mosque, as it is the basis on which they can develop its conceptual design. Mosques are primarily social objects. They carry meanings for society in general, and users in particular. Therefore, special attention needs to be placed on choosing the appropriate design for the mosque, taking into consideration the location characteristics; residential, commercial, or part of institution complexes.

Furthermore, the social context must be evaluated. The changing functions and the evolving socio-cultural milieu of the mosque must be considered. It seems that the courtyard is the key

spatial element most related to the social domain, when designing the Friday mosque, as courtyard position acts as an intermediate space between the public and sacred space, offering the opportunity for architects to incorporate in their design a transitional space, that can be used for different purposes; social, educational, and religious. It offers the opportunity for reviving the social connection between the Mosque and the surrounding neighbourhoods.

It was also found that there was a preference for grandeur and monumentality in most of the state mosques, an approach that contradicts with the Islamic traditions of encouraging less ostentatious appearance in mosque design. This led to the loss of connection between the memories of the place, and it would be advisable to maintain this connection between the people and their surroundings, in future designs.

Moreover, the introduction of the building regulations, which started mostly in the 1970s, has a role in restricting the freedom of designers to adapt their design to site needs, and it is advisable for regulators to reassess these restrictions in relation to Friday mosque types, wherein the residential quarter 'Freej' Friday mosque should have different regulations and design standards than to the mosques built in the commercial and institutional urban settlements. The architecture expression of the Friday Freej mosque, must be responsive to the local traditional culture and integrated with the community's socio-cultural context.

9.9 Future Recommendations

The literature on Islamic architecture has explored, discussed, and investigated to a large extent the mosque architecture of the Islamic world, including Abbasid, Andalucía, Persian, Asian, Ottoman, Moroccan, African, and Arabian mosques. However, there has been relatively little research into the Arabian Gulf mosque architecture in relation to its traditional architectural significance and its implications on its formal language in the post-oil era. This study may have

contributed partly to this mostly neglected subject. It may open the door for future researchers to conduct studies of the mosque's formal architecture and spatial languages in the Arabian Gulf. Further research in this area may include studies on the emergence of new trends in Friday mosques of the Gulf region and the development of 'hybrid-style' mosques.

GLOSSARY

Athan: a call made to inform people that the time of the prayer has begun. It is obligatory for the congregation in the mosque while for individuals praying alone at home, for example, it is a highly-preferred act.	**Imam**: means 'leader', or the man who leads the prayers.
Qibla: the direction of the scared shrine of the Kaaba in Mecca, Saudi Arabia, toward which Muslims turn five times each day when performing the salat (daily ritual prayer).	**Musalla**: an open space outside or inside a mosque, that is mainly used for praying.
Mihrab: An ornamental indentation in the wall of a mosque, which marks the direction of the qibla.	**Sabla**: Semi-public space for social or educational gatherings.
Minaret: an element of Islamic religious architecture. It is the tower traditionally used by a muezzin who calls to prayer five times each day. (Athan)	**Freej, Frjan**: District or neighbourhood.
Riwaq: the arched chambers around a courtyard within a mosque.	**Sunnies**: one of the two main branches of Islam, meaning people of the tradition. This refers to the group that believe Abu Bakr, the first Caliph at the time, should succeed Prophet Mohammad.

Thaillu: literally translated in Arabic as 'shadow'.	**Kaaba**: Located at Mecca, is the cubic building at the center of Islam's most sacred mosque, known as Al-Masjid al-Haram.
Qubbah: commonly refers to a dome.	**Shia**: One of the two main branches of Islam, that rejects the first three Sunni caliphs and regards Ali, the fourth Caliph, as Muhammad's first true successor.

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APPENDIX A

(Interview with Godfrey Heaps, 2016)

1-   Was there a competition for the design of the Sultan Qaboos Mosque?

   Yes

2-   If the answer is yes, what was in your opinion the winning factors in the design, compared to other participants' design submissions?

   I believe that the decision to assemble the various components of the brief as a monumental composition on a podium bounded by containing elements and thereby creating an appropriately contemplative sacred environment was the single important factor in the choice of the winning design.

3-   In the State Mosque of Kuwait, Makiya used "Wall Bay Unit" as design element in the interior and exterior walls of the mosque. Would you say that he used the same design methodology in Sultan Qaboos Mosque?

The design of these two mosques are separated by some 15 years and as such belong to two quite different periods of architectural thinking. The design of the Kuwait State Mosque was developed with an explicitly conscious interest in the exploitation of contemporary building techniques, particularly the interest in pre-casting technologies. Dr Makiya sought to develop an architectural language which reinterpreted the thick masonry construction traditional in monumental buildings of the region. However, he sought to do this in the language of contemporary, industrialized building methods. He further sought to achieve a contemporary arabesque language in a combination of the complexity of the "wall bay" component and the careful introduction of pre-cast panels of arabesque pattern and calligraphy.

At the Muscat, Grand Mosque there are similar interests in expressing the monumentality of the thick wall and with the importance of the structural grid in developing a rhythmic repetition as an organizing system. However, in this building the thick wall is visually more conventional and adorned in a more typical traditional material and manner. That said the depth of the thick wall has both a structural logic as a self-supporting diaphragm and an environmental logic where the wall depth helps to mitigate the effects of the local climate.

4-   In your opinion, were there any design elements in Sultan Qaboos Mosque that represent or were inspired by the local Omani culture? If the answer is affirmative, please list the sites, buildings or other sources which were visited or used?

Dr Makiya was very familiar with the architectural traditions of Oman having designed a number of buildings and undertaken field research work.in Muscat. He was responsible for a measured survey of the old city in the early 1970's which led to a study on the master planning of Muscat and its Environs. This work was revisited in the mid 1980's with the private commissioning of a definitive book on the Architecture of Oman. The latter was not completed but this long association with Oman informed Dr Makiya's design for the competition of the Mosque. Subsequent to the appointment of the job an office was set up in Muscat to develop the design and prepare construction information. A great deal of local research was undertaken where we investigated both characteristic architectural form but also traditional arabesque details. The sites visited were numerous but a short list of the key influences was

•   The Great Mosque at Bilad Bani Bu Ali with its multiple domes

•   The Fort at Bilad Bani Bu Ali which is a wonderful example of fortified town planning

•   The Great Mosque and the small mosques at Manah

•   The mosque at Manal

- The Great Mosque at Bahla.

- Various villages throughout the interior regions of Oman.

5- In the design of Sultan Qaboos Mosque, there are two separate Riwaq (not connected with the mosque main building), what was the reasons behind that?

The two Riwaqs delineate the edge of the monumental platform on which the primary, sacred elements of the mosque are positioned. This positioning forms an open ended maidan which we call the Outer Sahan. (the Inner Sahan being the smaller outdoor prayer area behind the Entrance court to the Prayer Hall.). The outer sahan provides an enclosure which creates a tranquil space between the calm of the Prayer Hall and the Noise of the outside world. The Outer Sahan is open to the Qibla in the west and to the main part of the city in the East.

6- Was cosmology taken into consideration when designing the master plan, the layout and spatial spaces of Sultan Qaboos Mosque? For example; the direction of the sun against the walls, wind/ air circulations... etc.

Environmental concerns were important in the positioning of the elements of the mosque, although the nature of the architecture, its wall depth, arcades and architectural layering work well in the often-harsh climate of Muscat. The Riwaqs work very well in modifying local environmental comfort levels. With the aid of off shore breezes the perceived temperature in the North Riwaq is appreciably lessened.

7- How do you describe the mihrab in Sultan Qaboos Mosque, was it constructed separately? Or was built as a part of the Qibla wall?

The Building is an RCC frame and therefore the mihrab is installed within the frame rather like an item of permanent furniture.

8-   In order to comply with Sultan Qaboos request of including a diversity of Islamic culture within the mosque design, how did Makiya address this? Which processes were used to select the design elements, such as columns, arches, dome, minaret... etc.

The components of the building were designed as a family or vocabulary of elements which were considered appropriate to such a monumental building in an Islamic context. Many key components such as the design of the gateway abutments to the south courtyards, the vaulted gateways, the corner treatments of the prayer hall, the design of vault elements in the inner sahan, and the design of the main dome, are all architectural vocabulary developed with reference to traditional precedence but also as a contemporary or abstracted restatement of traditional form. The 45-degree chamfer is a component which reiterates throughout the design at all scales. There was an early decision to integrate Omani pattern work throughout all building elements of the Grand Mosque. However most specifically with regard to your question, from the outset the Riwaqs, which are divided by entrance points into a total of 12 "rooms", were seen as a museum of Islamic and Pre-Islamic decorative art from the wider Islamic region. We have in these areas rooms dedicated to the Pre-Islamic arts of Egypt and Byzantium, rooms dedicated to the art of the various regions of the Islamic world, to the Textile and silverwork designs of the Arabian Peninsula and rooms dedicated to Islamic designs using contemporary techniques and aesthetics.

9-   Was Makiya and associates the only architecture firm involved in Sultan Qaboos Mosque architectural design or were there others?

Dr Makiya was the chief design architect for the project. He was responsible for the concept at the competition stage of the work and had a mentoring role in the project. Professional responsibility for the project, Lead consultancy and responsibility for the management of the project on site were all undertaken by Quad Design. After preliminary design was approved

Quad Design set up an office in Muscat to develop the design and prepare working drawings. By necessity the primary design processes moved to Muscat and the project was under continual design review by the client until it was completed in 2001.

10-   Were there Omani local materials and construction methods utilised in the mosque construction? Given that Makiya used "Alajer" as in mud brick or adobe materials in his early projects in Iraq.

The Mosque was conventionally constructed as a modern RCC frame with structural blockwork infill and clad with Indian Sandstone on stainless steel fixing. The majority of materials used on the project were imported however a very high percentage of the craftsmanship required for the project was undertaken in Oman by Omani companies. This was a steep learning curve for many of the companies employed on the project but has had a very positive long term impact on the craft and manufacturing skills now available in Oman ranging through all the trades that worked on the Grand Mosque. Traditional Omani construction methods are available however most of the master builders have found difficulty with passing on their skills to the next generation. Traditional lifestyle expectations have changed in Oman and job preferences have changed accordingly as Oman has developed into a modern nation. Traditional Sarooj construction is available still as are other traditional methods thanks to the efforts of institutions such as UNESCO and the Ministry of Heritage and Culture. There has been an ongoing programme over the last 40 years to restore the more significant monuments in Oman however the use of traditional methods is not so widespread as to provide sufficient work for all but a small group of specialist builders. The maintenance of such traditional building methods is frequent which further discourages their use.

APPENDIX B

(Interview with Kanan Makiya, 2016)

APPROVAL FORM	
Interviewee:	Kanan Makiya
Thesis Title:	Friday Mosque of The Arabian Gulf: Defining its Spatial and Formal Languages-1975-2010
Author:	Haifa Ebrahim
University:	Cardiff University
By signing this form, the interviewee grants permission for the Author to use the Quotes in the Thesis.	

Interview questions:

1. Kuwait State Mosque was the winning design of a competition, in your opinion, what was the winning factors in the design, compared to the other participants' design submissions?

1. In your book 'Post-Islamic Classicism: A visual essay on the architecture of Mohammed Makiya', you mentioned that the form of the mihrab of Kuwait State Mosque is originating from the mihrab of Khulafa Mosque in Baghdad, but differ from it in its interjection causing an interruption of the "Wall bay unit". Was this intended by Dr. Mohammed Makiya to emphasis the mihrab in the design or was it a client request? Was it constructed separately? And where? (Locally or outside of Kuwait)?

2. Some critics said that the mosque represents Abbasid- Persian architecture. In your opinion, which influences are most visible in the formal language of the mosque?

3. Following the above question, were there any design elements in the mosque that represent or were inspired by the local Kuwaiti culture? If the answer is

affirmative, please list the sites, buildings or other sources which were visited or used?

4. Landscaping of the mosque was done after a period of time from the mosque construction completion, what was the reason behind that?

5. In designing Kuwait State Mosque, was there any consideration given to the location and design of the adjacent palace of the Amir (ruler's palace)?

6. There were some changes/ modifications to the mosque design (interior decorations, exteriors and urban spaces) what effect did it have on Dr. Mohammed Makiya's vision?

7. In your book mentioned above, you wrote that Dr. Makiya 'went for mass as volume, mass as definition, and ceremony as the principal relation between inside and outside'.(Makiya, 1990, p. 68).
   Would you say that Dr. Makiya adaptation of 'wall as volume' in Kuwait State Mosque design, had contributed in staging the mosque as monumental building. Would you say that this could have been avoided if a different approach was taken? And were there any alternatives design strategies suggested to 'humanize' the scale of the mosque'?

8. Comparing to Sultan Qaboos Mosque in Oman, the 'wall as volume' was expressed in the design by Dr. Makiya in more visual conventional and adorned in a typical traditional materials and manner. In your opinion, would you say that this is also achieved in Kuwait State Mosque? That said, would you agree that even though the principal design of 'wall by volume' was applied in both of mosques, there are differences regarding the architectural and spatial languages of the two mosques?

9. The size of the grand sahan and the main prayer hall are both the same, which is 5,000 square-meter. Has this spatial arrangement affected the capacity of worshippers, taking the environmental conditions into consideration, the open sahan has less appeal in drawing worshippers, which could lead to lower utilization. What was the reason in allocating equal spaces to prayer hall and grand sahan?

10. Were there any urban factors that had an impact on the design of Kuwait State mosque? Was the social dimension was taken into consideration when designing the urban spaces? For example; the ability of using the courtyards to house the social activities of the local community such as gatherings, festivals, charity events...etc.

11. The submission for the 1977 competition, shows smaller domes over the prayer hall, also the original rendering in your book, shows some fountains in grand sahan, north and south courts. All these design elements were absent from the final design. Were these changes based on the client's requests?

A dilemma that Kanan (2016) recalled during the interview by stating that 'if you think of the Khulafa mosque, of course it is very small building, the site is actually being tiny, but you can see it more like a stage setting, it's like- as my father used to put it- "I had

to build a cathedral in an area suitable for a chapel". Meaning, his design intention was to give it a grandeur that the space itself did not allow, that the site itself did not allow'

However, the architect found a design solution where he maintains the integrity of the mosque's architectural historical identity. As it will be discussed in the following pages.

The interior vaulted units of the mihrab shape, are projected to the outside by what Kanan described as boxes. It is here where Makiya expressed the principle design of 'wall as volume', in which he made the wall to become a three-dimensional space. While the mihrab, internally is not singled out by being projected from the Qibla wall as it is usually done, the architect emphasised it by decoration design that is more elaborate than other the vaulted arches. According to Kanan (2016), who described the mihrab settings as 'in both buildings; Khulafa and Kuwait state mosque, that idea of interruption, is of course developed, worked out architecturally, and I think both were equally successful. They bear very close resemblance to one another' (Figure 7.5a, 7.5b).

According to Kanan (2016), the winning factors in the design competition were expressed by the traditional visible skin of the mosque and in the modern hidden skin of the interior, which is elaborated by the wall bay units. In my interview with him, he explained further, saying that:

> I think my father's design was more traditional looking on the surface than some other schemes. Only from the outside, but in the inside, the wall bay unit, is not traditional. The wall bay unit is the most interesting and the crucial feature in the project, which might have played the role in the jury's decision.

Kanan (2016), addressed this issue during interview by arguing that:

there is no monumental tradition of architecture in Kuwait, and this is a monumental building, this is a building intended to make a statement that is usually done not by specifically indirect and informal ways of indigenous architecture, which is not always preplanned and which develops organically, so to speak, this is preconceived monumental conception, and I think it is the first building (KSM), in which he really moved in that direction. He was later to make many mosques, all of them, I would call monumental.

As can be seen from the mosque spatial program; The mosque, is designed with sequence of open spaces, leading to semi- opened and then enclosed spaces, and the hierarchal sequence of the spaces is organised based on a vertical axis that is built up in accordance with the mihrab axis, which Kanan (1990, p. 63) described as:

The over effect in massing and silhouette terms is indeed very traditional. Entry to the prayer hall is staged along the mihrab's axis… so far all we have is architecture as pure ceremony, as continuous celebratory history. No ambiguity. No novelty. No acknowledgment of modernity.

Kanan (2016), commented on this event, during the interview, by stating that:

The consultants; Makiya's associate, did very elaborate interior design, and the landscape design was less developed than the interior design. In both of these cases, the client took over the building a bit too early in my opinion, before that work was done and hand it over to sub-contractors. Personally, I think this was a big mistake, there was a connectedness, a weave between interior and exterior, which was lost; when you bring outsiders and they were not really designers but they were excellent Moroccan craftsmen. They did not understand the spirit that applied.

They went overboard, slabbing decoration over everything. If you look at the early drawings, and some of the perspective drawings, you see the interior decoration is understated, not overstated (Figure 7.27).

Kanan (2016), addressed the alternations made on the original design of the mosque, by stating that 'there are no modifications made on the main structure. However, we were released from the site after the building was finished but before the decoration was put in, and we had no control over the decoration as consultants.'

In the interview, Kanan (2016), responded to this design approach of his father, by stating that:

It was intentional. Sahan was important to my father, one can pray in the sahan as one can pray inside the mosque, but also one is allowed to socialise in the sahan; go for a picnic, play with children. He loved that part of the sahan role; you are inside this protected space where you could pray, contemplate and also socialise. Although, I don't think it ended that way in the final design, for various reasons, largely to do with the landscaping, and I think that is what he wanted the Sahan to become.

According to Kanan (2016), who argued during the interview that 'My father was right to choose the multi-story car park to put it underground not to let it rise as mass and compete with the volume of the KSM. I think that was a correct decision.'

Kanan (2016) argued that it 'seems clear that the client felt that they wanted more elaborated interior decoration; they identified the magnificence of the mosque with

plenty of intricate ceramics and decorations, which I think this is not accurate way to think about in this type of monumentality.'

Kanan (2016) best captured this non-alignment of vision between the architect and the client in the following statement during my interview with him:

> The decoration is meant to highlight, to state, to understand, to play with the meaning of the elements of the architecture, and I think that was lost in the way it was done. It's one of the big disappointments of that building in my opinion.

Kanan (2016) argued that his father 'developed his ideas even more, to the extreme, start as wall, becomes a thick wall, then develops into a wall as volume, and then from wall as volume it becomes a space. And this arises from his sense that is the role of the wall.'

According to Kanan (2016) even though, that Makiya did not utilize the local architectural culture in the design of KSM, his residential projects in the Gulf region was influenced by the Kuwait vernacular architecture; 'Kuwait for my father was indigenous architecture, and what I know for fact is what influenced him was the indigenous architecture; the houses architecture, the local traditional streets, that did had influence on his house designs in many parts in the Gulf, and from then onwards, this thing applied to other parts of Arabian Gulf '.

Kanan (2016) explained this further in the interview by saying that:

There are two very important principals come together; firstly, the traditional mosque, what it represents, the wall bay unit coming out of thick wall character, and on the other

hand, modern materials and technology to keep the thick wall character, but to change it in a way that is without a doubt modern. And I think that it was extremely successful in KSM. The hanging; the way which concrete allow you to suspend panels up above and move them backwards and forwards to develop the space, as a kind of enveloping thing, that is also very successful. Much more developed in KSM than Khulafa, in regard to his thinking and how to use modern technology